MODEL TRAINS

55p

AIRFIX

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Building the Willow Valley Railway – complete compact layout plus modelling in Z gauge, light railway models, and much more!

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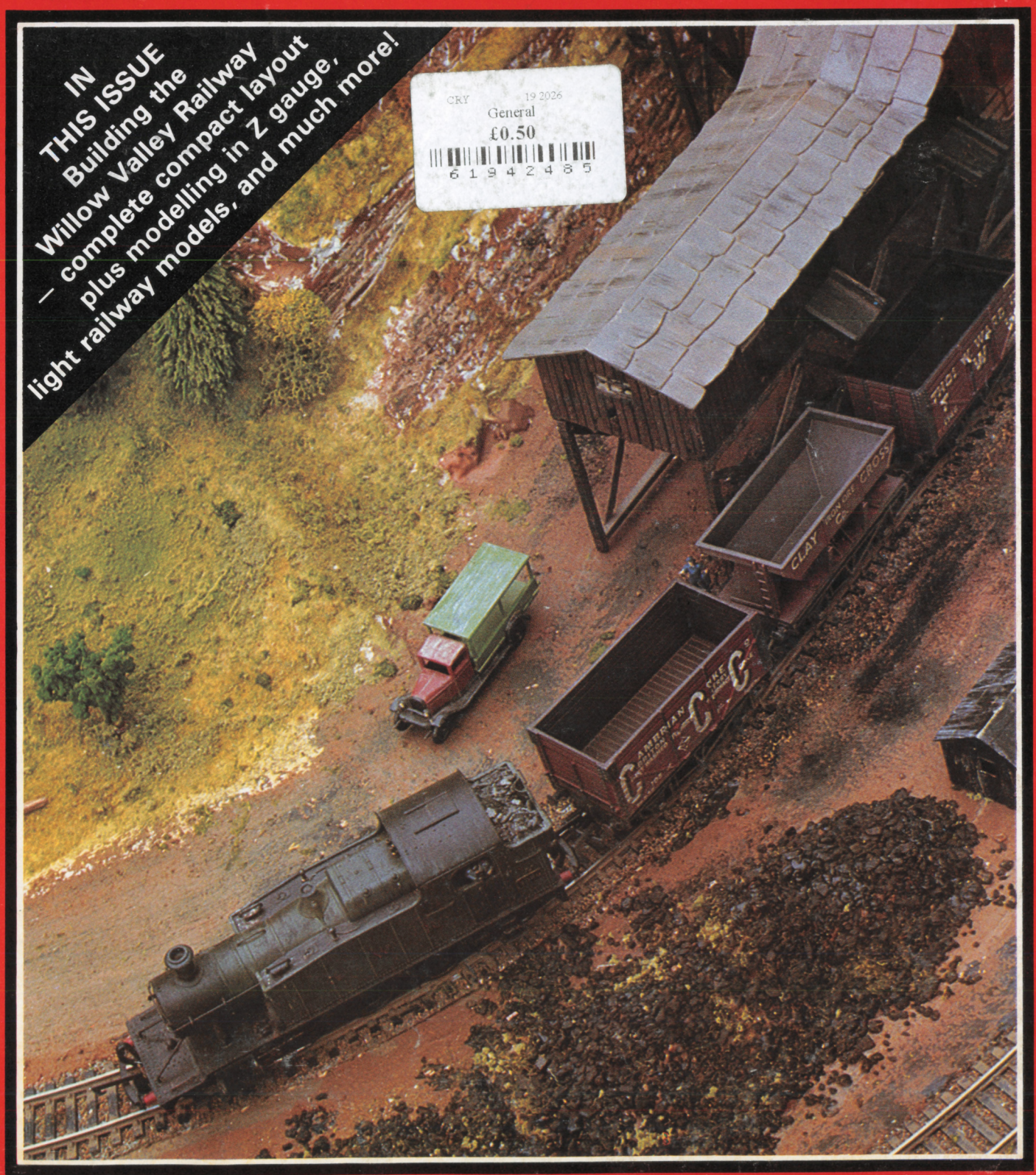
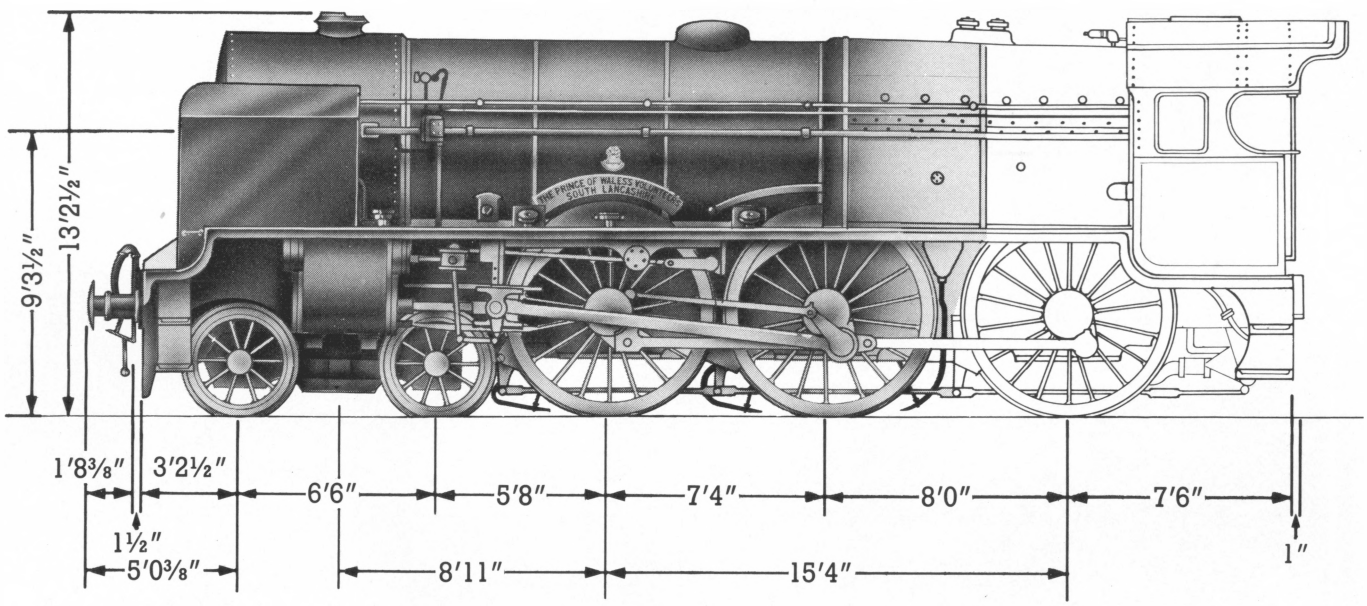


A GREAT SCOT.



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MODEL TRAINS

DECEMBER 1981

AIRFIX

VOLUME 2 NUMBER 12

Editor Chris Ellis
Assistant Editor Christine Lake

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Kingston, Surrey,
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ABC

MEMBER OF THE AUDIT BUREAU OF CIRCULATION

A classic scene at Battersby as the driver of a Metro-Cammell DMU surrenders the single line token to the signalman at the platform end. Very simple track place at this interesting station can be modelled in full making this a superb layout idea for those who favour the modern era – though it could equally well be modelled as a steam age layout. See page 622 (Steve Rabone).

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On the cover

Biggest source of revenue on our Willow Valley Light Railway is a coal mine, Forest of Dean style, and we flew over the site (in 1946) in a Tiger Moth to record this bird's eye view as 'Small Prairie' 4589 pushes empty wagons under the chutes for loading. How to build this 'pocket handkerchief' light railway layout is covered in detail in this month's issue, but this scenic work is featured next time.

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GRAFAR Class 37 Diesels BR Green or Blue **£20.50**; Class 47 Diesels BR Green or Blue **£18.50**; Class 47 "Lady Diana Spencer" **£22.95**; 4P Compound 4-4-0 LMS, BR or Som/Dorset **£15.95**, 08 Diesel Shunter **£11**, BR or LMS Class 5 **£22.50**, GWR or BR Prairie Tanks **£15.95**, Gen. Purpose 0-6-0 Tanks **£12**, GWR or BR Pannier Tanks **£12**; GWR or BR Hall Locos **£18.95**, BR or SR Merchant Navy Locos **£17.50**, Pullman Coaches **£3.50**, 0-6-0 Chassis **£9.75**, Hall Chassis **£15.95**; Prairie Chassis **£12.45**, Class 5 Chassis **£18.50**. **PECO** Jubilee **£28.50**, Streamline Track Nickel Silver 25 yards for **£19.95**; Steel 25 yards for **£16.95**, Med. Rad. Points **£2.45**, Large Rad. Points **£2.75**, Curved Points **£2.75**; Crossings **£2.20**. **MINITRIX** Locos A4 Mallard BR **£24.95**, 0-6-0 Dock Tank **£11.50**, Britannia **£19.95**, Warship Diesels **£18.50**; 2MT 2-6-0 Tenders **£18.95**; BR 2-10-0 **£24.95**, Class 27 Diesels **£18.50**, Minitrix Coaches all **£2.95**, Deltics **£10.50**, Class 86 Electrics **£10.50**, Fowler **£12.35**, Coaches all types **£1.75**. **BARGAIN**. 48 Fences, 24 Tel' Poles, 24 Figures, 12 Fir Trees All For **£2**. **Memod Live Steam Gauge 0 Sets**, fantastic value **£55**; Blue, Red, Green Tank locos **£37.50**. Open Wagons **£6.95**, Lumber Trucks **£6.95**, Flatbed Wagon Chassis Complete **£5.50**. 8 Straight Tracks **£6.95**, 8 Curved Tracks **£6.95** Guards Vans **£8.25**, Gronds Vans **£8.25**; Passenger Coaches **£8.25**, NOVO BR Bogie Coaches **£3**

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£1.10 yd (N/S) minimum 12 yds by post, 25 for **£22.50** with steel rails **80p** yd. 25 for **£16.95** (concrete or wood), Points Set Track **£2.25**, small rad. **£2.35**, Med rad. **£2.70**, Point Motor **£1.20**, Double Slips **£8.70**; Points or curve **£3.00**, Setrack Curved Points **£2.75**; Large rad Points **£3.00**, Short Crossing **£2.00**, Long Crossing **£2.20**, Large radius 'Y' Points **£2.80**, Small Y Points **£2.40**; Electrofrog or Finescale Points **10p** extra; Fishplates **35p**; Point Underlay **90p** pair. Roll of Underlay **£1.50**

009 NARROW GAUGE BARGAINS

MINITRAINS Diesel Shunters, **£10.50**, 0-6-0 Steam Tank, **£11.50**; Goods Stock 6 for **£4.95**; **LILIPUT** 0-6-2 (black) Tank Loco **£16.95**, 706 0-6-0 Green Tanks **£16.95**. **PECO** 009 track **45p** per 18". Points **£2.45**. 009 Complete Loco Kits including Arnold Chassis, PECO 0-4-0 Side Tank Jeanette **£19.95**; 0-6-0 Sad. Tank James **£19.95**, 0-6-0 or 0-4-0 Vari Kit **£19.95** (all incl. Arnold Chassis) **GEM** 'Douglas' **£18.95**, Dolgoch **£18.95**, Mountaineer **£18.95**; **Dundas** Hunslet 2/6/2 Tank **£27**, Wagon Kits – Open Wagon **£1.50**, Goods Van **£1.50**, Brake Van **£1.50**, 4 Wheel Coach **£1.50**, Hopper Wagon **£1.50**, Coal Wagon **£1.50**; Eggar P24 Mineral Waters Box Van **£2**, P27 American Coach **£2**, P42 Luggage Van **£2**, P44 Brake End Coach **£2**. Jouef 00 Class 40 Diesel **£12.95**, BR Blue or BR Green, MKIII Inter City Coaches 1st, 2nd or Trub Buffet **£3.65** each

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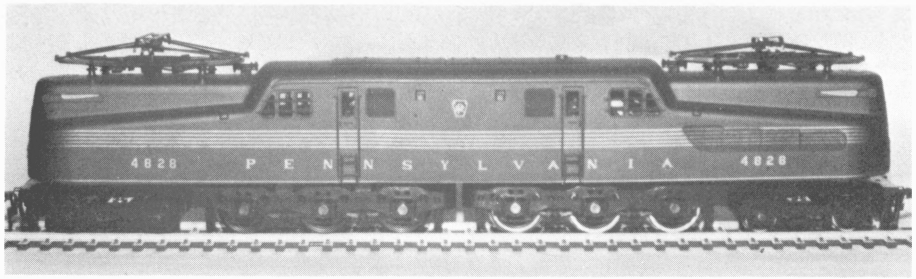
NEW GWR Single Railcar in BR or GWR **£9.50** New Class 87 LMR Electric Loco **£9.20**, BR Diesel Multiple Unit, BR Green, Blue/Grey or Blue, bargain price 2 Car Set **£12.95**, Crab Mogul BR Black or LMS **£17.50**. Special Offer, BR or GWR Pannier Tank, ½ List Price, only **£5.75**; GUV Vans **£2.30**, 3-axle Milk Tank Wagons; St lvel, IMS, Express or CWS **£2.10** each, CCT Vans **£1.80**, N/Silver Electric Points half price **£2.35** each. All coaches **£2.75**.

N GAUGE LOCO & DMU KITS

(Complete with working chassis) **P.D. MARSH** GWR Mogul **£21**, Class 47 Diesel **£12.95**; Peak Diesel **£12.95**; **LANGLEY** GWR Railcar **£12.95**, GWR Twin Railcar **£18.25**, Class 24, 25 or 29 Diesels **£14.50** each, GWR 14xx and Autocoach **£22.50**, GWR County **£22.50**, A4 **£24.95**, A3 **£24.95**, Duchess **£24.95**, GWR 2251 **£17.95**, GWR 56xx **£16.50**; **MTK** Western Diesel **£12.50**, Met-Cam 2 car DMU **£17.50**, 3 car DMU **£22.50**, BRCW 3 Car DMU **£22.50**. Also D&M Royal Scot **£22.55**, 4F Tender Loco **£21.95**, LMS Patriot **£22.95**, J39 LNER **£14.75**, Princess **£25.00**; **GEM** 3F Tank **£17.50**, Fowler 2-6-4 Tank **£29.95**



Above: *One of the all-time classics is the PRR GG – 1, now modelled in H0 by Pemco. See 'Test Track', page 662. Model is available in PRR red (as here) or dark green.*

Editor's desk

This is the time of year when really active railway modelling gets under way, for the winter evenings prohibit outdoor pastimes. That, at least, is the usual thing that people say about now, though I suspect that really keen types are actually modelling with great vigour around the year. It is certainly the time of year when newcomers take up the hobby, however, for Christmas is the big sales period for train sets – as it ever was. And window displays in the shops will feature more model trains, no doubt, attracting yet others to think about taking the plunge into the hobby.

Despite the general recession, this is certainly a good time for taking up model trains, for the choice available is better than ever before and there are bargains to be had in abundance. In fact model railways must be one of the least expensive hobbies in the modelling field – compare how much you need to spend, for example, to get going in radio control or slot car racing. Then look at train set prices or tot up how relatively little you need to get started with a simple layout, using a small tank engine and a few wagons. Space demands are not too outrageous either if you accept the limitations which you may have to face. If you are still thinking about it get along to your nearest model shop and make a start!

In this issue we have come up with something appropriate to all this, for several of our articles are produced with beginners very much in mind. We've looked at 00/H0, most popular of all sizes, with some suggestions for first purchases, some pitfalls to avoid and some ideas to go for, and then we have a layout (the Willow Valley) which anyone can build quickly and inexpensively to get a small but effective layout running in minimal space by Christmas! This time you can get to the train running stage, and next issue we'll do most of the scenery. Then soon after we'll be on to the first expansion stage, so if you keep with us you should have a good layout running in no time. The only real skill required in these early stages is the ability to screw and glue the baseboard framework together.

Don't follow our scheme too rigorously. For example if you have 4ft square instead of our 3ft square, make the same track plan that little bigger, for we have gone to minimal dimensions just to show what can be done if you feel you haven't really got room for a layout. Absolute beginners can follow our scheme with confidence, but if you are an 'armchair modeller', interested for years, perhaps, but yet to get round to building a layout, you'll find the Willow Valley fun to make even while you go on planning the dream layout you may build some day. Indeed, the Willow Valley can always be incorporated into bigger dream layouts and our introductory article this issue shows how it can go on expanding to suit the space you have now, or may have in the future.

To get sufficient of the Willow Valley project published to give you a flying start we've had to hold over the Loch Tay instalment until next time. While we've done the Willow Valley in 00/H0, it's worth pointing out that you can do it in any other scale – for gauge 1 or gauge 0 you'll need only about 5½ft square because the sectional tracks are relatively sharper!

This issue ends our second volume and an index is included in our centre pages. In the next issue look for the complete run down on Siphons, how to build a Southern electric set, Newtor Part 5, and another fine idea for developing a simple train set – this time based on a real railway in the London area and packed with interest. Plus all our other features, of course. Meet us again next issue. **Chris Ellis**

Clubs, Societies and Exhibitions

Meon Valley Locomotive Society are holding an exhibition at the Jubilee Hall, Little Shore Lane, Bishops Waltham, Hants on November 21. Adults 40p, children, 20p, family £1.00.

Lea Valley Railway Club have moved from Cheshunt to Datchworth Green and are undertaking renovation work on the building. New members are most welcome and enquiries should be sent to The Secretary at 75 Graeme Road, Enfield, Middx.

The Solent Model Railway Group invite everyone to their exhibition at the Guildhall Civil Centre, Southampton, on November 27, 28 and 29. 17.00 – 21.00 (Fri), 10.00 – 19.00 (Sat), 10.00 – 15.00 (Sun). Adults 80p, children and senior citizens 40p.

Bexley Model Railway Club are holding an exhibition at Freemantle Hall, High Street, Bexley, Kent on December 19, 11.00 – 17.00. Admission to be decided.

MATTERS ARISING

On reviews and reviewing . . .

Looking back over the past year, one matter which arose several times in letters from readers, was the subject of new product reviews. We probably set the ball rolling earlier this year when our review of the Lima Crab pointed out some dimensional problems with the model which some other reviews didn't pick up or emphasise. The UK Lima distributors were not happy with our review, but at least we showed readers what they would be buying and in a later article we showed how to sort out the model. We've followed the same policy with all reviews, but as most models are remarkably good for mass-produced items, relatively few reviews need to be extra critical. Some of the private society journals have also published some 'nitty gritty' reviews in their own areas of interest, and several of the society publications to come our way have complained of blandness and incompleteness in some of the reviews appearing in the national model press – though *Model Trains* seems to be largely excluded from these strictures.

More recently we heard from D.J. Catton, who comes up with the suggestion that an independent body would be a good thing, able to carry out detailed reviews of new products and provide subscribers with reports, the idea being to overcome the inadequacy of some of the model press reviews where important matters (like inaccurate dimensions) are overlooked. Mr Catton would run (or set up) such a body and if you are interested please let us know and we'll pass letters on. The idea is to save you buying a model on the basis of a brief or indifferent magazine review, only to find, too late, that it does not meet your expectations.

Essentially this is a good idea, but I have to temper even Mr Catton's enthusiasm with a note of caution. For the model railway hobby has so many ramifications that it is difficult to be very dogmatic about anything – even reviews! Most successful railway modelling depends on the art of the compromise, and this can mean almost anything to almost any modeller, for no two enthusiasts have exactly the same interests, can devote the same time to the hobby, or even seek exactly the same degree of satisfaction from it. All the way through there are compromises of scale, of construction, of standards, and of operating methods, and much more besides. Nobody is forced to follow any set rules or procedures under the pain of excommunication or dismissal (though I think it may have been tried in certain quarters) and the freedom of personal approach is one of the attractions of the hobby.

Obviously, however, there is a general consensus, common to modellers and manufacturers of all kinds, that realism is the thing to aim for within the limitations of skill and manufacturing processes. How far you subscribe to the consensus view depends on your personal skills and ambitions. If accuracy to the finest degree appeals to you, then you'll probably gravitate in the direction of P4/S4/EM, and be prepared for a lot of work on track and chassis conversions. If operations and a big layout built in short order appeal to you, then you may be perfectly happy with what the big manufacturer's offer, with never a worry about track and wheel standards. The

Continued on page 662

Trainlines

LETTERS TO THE EDITOR.

Stop!

Please stop advocating the practice of making holes in often expensive loco body shells by way of using red hot pins! Agreed a Minidrill is not essential, but an appropriate size drill in a pin vice (available from tool shops and good model shops) would be neater, easier to handle, less prone to disaster and somehow more ethical.

I appreciate that your aim is to show that getting started is not as daunting a problem as many would-be modellers suppose, but please don't perpetuate sloppy practices when the correct way is neither difficult nor expensive.

What about an article (or series of articles) on a beginner's toolkit and how to use it properly? A small collection of good quality tools, a small vice, a razor saw, some jeweller's files, a craft knife, single edge razor blades, etc. After all, if little George is always wandering about with red hot pins, who worries about razor blades?

W.R. Andrews, Chingford, London, E4

Point taken! I think we always put in a rider on the safety aspect of using hot pins. Several times lately we've had to resort to pins because we've mislaid the drills. **Editor**

Zero-1

On reading your October issue of *Model Trains* I have noticed a letter sent in to you by Mr. P. M. Ashton, Aylesbury, Bucks.

I am concerned to hear that Mr. Ashton apparently experienced some problems in running our Zero-1 control system and would be grateful if you would arrange for this letter to be forwarded on to him so that I can take the matter further and find out if there is anything I can do to assist him in solving his problems.

In passing, I would advise you that to the best of my knowledge Mr. Ashton has not been in touch with us to advise us of his queries. The reason I make this point is that we have, over the last two years, obviously had occasions to deal with very many members of public who have purchased the Zero-1 system and who have had various queries with the installation of this system. In the majority of cases we have been able to satisfy these problems and have arrived at a situation where we have a satisfied customer. We have at no time brushed off anyone who has approached us with a problem with Zero-1 and we have endeavoured in all instances, both in telephone conversations and by visits by our technical experts to consumers' homes, to rectify any problems that may have arisen.

David G. Evans, Marketing Manager, Hornby Hobbies

Many thanks to all our readers who have written in on this one with advice, praise and criticism for Zero-1. We intend looking into this subject in greater depth than has previously been covered so we will therefore publish our findings along with readers' experiences, at a later date. **Editor**

Attention!

After reading Eric Slagg's article part two, on the Newtor City Tramways, I would like to draw attention to the dangers to the face and body, of being lanced or cut by the finials on the tops of model tram standards (and trolleybus come to that), if care is not taken when leaning over a layout so equipped. Unlike finials on model railway signal posts, the tramway ones do not break off under impact and so can penetrate clothing and skin. If finials are necessary the safest are the 'ball' finials as used on London Transport standards which are still to be seen on some former trolleybus routes. Even using these great care must be exercised for the protection of the eyes.

I have had several scrapes and one near miss to my eyes. No doubt others have had similar experiences, some may have even suffered badly.

Colin Withey, Croydon, Surrey.

The SD35s

I was interested to see your review of the Pemco SD35 in the September issue of *Model Trains* but I think the review is a little in error with regard to the railroads that actually used this type of locomotive. It is difficult to establish which locomotives were used by which railroads in the US partly due to the fact that so many different loco types and so many railroads are involved. However, some railroads such as Burlington Northern, Union Pacific and Southern Pacific are well documented and books are available giving a great deal of information on their loco rosters. With some railroads it is a case of picking your way through various magazines and books and piecing the picture together, if you can.

As far as the SD35 is concerned, this is a 2500 HP Co-Co unit of which 360 were built, excluding variants, of which more later. A total build of 360 is not large by American standards. The equivalent Bo-Bo unit, the GP35 totalled 1333 locomotives being built. Burlington Northern definitely did not and does not have any SD35s in any form. I can find no evidence of Santa Fe having any either. I have some Atlas SD35s which came in ATSF colours but are now being converted and repainted as Southern Pacific, which did, and does have the type.

I cannot account for all 360 SD35s but the type was and is still used by the following; Penn Central, now Conrail has 52; Southern Pacific has 29 and Southern Railway has 10 of which I believe one is wrecked and retired. The SD35 is also used by Seaboard Coast Line and Western Maryland, Cheasapeake and Ohio, Baltimore and Ohio the last three forming part of the Chessie System.

Useful references for information on N. American diesels are to be found in; *The Second Diesel Spotters Guide* by T.A. Pinkepank. Kalmbach Books. *Diesel Spotters Guide Up Date* by the same author and publisher. *Extra 2200 South. The Locomotive Newsmagazine,* published by X2200, PO Box 41417, Cincinnati, Ohio, 45241 (available by subscription only).

R. J. Hodder, Swindon, Wilts.

Thanks for this correction. We have quite a lot of references on diesel allocation but I must confess that tracking down confirmed ownership of SD35s had us confused. **Editor.**

Help!

I have just purchased the September issue of *Model Trains* and ordered next month's. My enquiry concerns Newtor City Tramways by Eric Slagg. My compliments for a very interesting article.

I am 64, retired and trams are my hobby. I build from kits so my knowledge of scratch-building is rather limited. I took delivery of a Sheffield Roberts Anbrico kit and would very much like to try Mr Slagg's idea of the Airfix 5 pole motor. Could anyone tell me what type of chassis to use, what kind of wheels and pulleys and teeth gear wheel to use and where to get them from?

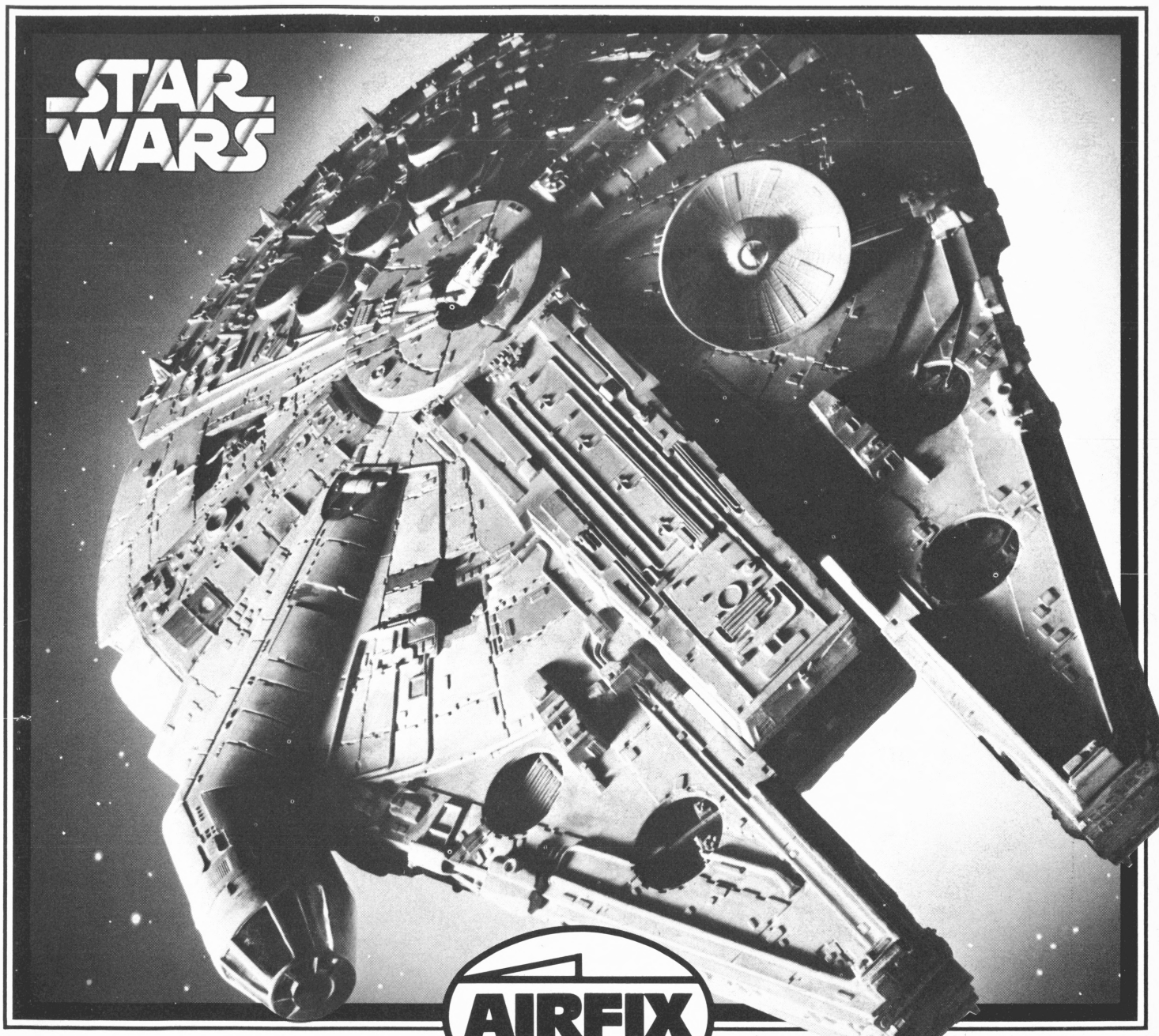
I also have another Sheffield Roberts which I would like to alter. I also want to build a Sunderland Ghost Tram which I believe was on a 8ft 6in wheelbase. Both Sheffield and Glasgow have 8ft 6in motors so any help from your readers would be greatly appreciated.

Mr. A. Millet
49 Manifold Rd, Ashley, Scunthorpe, Sth Humberside

Readers may like to write to Mr Millet direct on this one. **Editor.**

Dewsbury Model Railway Club wish to announce that their new Secretary is now Mr Robin Cass. All enquiries should therefore go to 801, Leeds Rd, Dewsbury, W. Yorkshire.

WE'VE CAPTURED SPACE.



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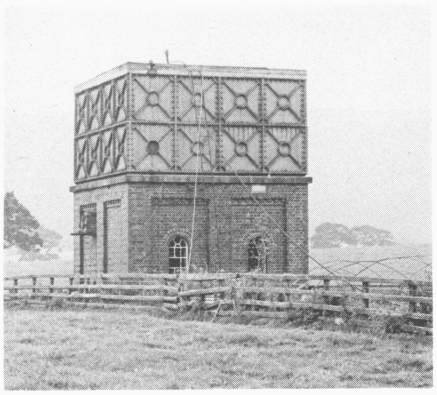
Battersby Junction

Basis for a layout

An excellent original with interesting operating potential for the present day, by Steve Rabone



(1) The old locomotive shed water tower still standing in the field behind the station. This would be an easy project and could use parts from various kits (eg, Superquick) if scratch-building was not desired

It was about ten years ago that I first travelled along the Middlesbrough to Whitby line in North Yorkshire and came across one of the most unusual stations in Britain. Battersby, known locally as Battersby Junction, is a terminal junction station about twelve miles out of Middlesbrough on the beautiful Esk Valley Line. Today all trains have to reverse at Battersby, although this was not always so. The recent railway history of this part of North-East England is rather complex. Until the later 1950s most Middlesbrough to Whitby trains ran via the coast line through Saltburn and Staithes. Many of them went on further down the coast as far as Scarborough. After the northern section of the coast line was closed to passenger traffic all Middlesbrough to Whitby, and Scarborough trains were diverted to run via Battersby. Up to that time the Esk Valley service had run to Stockton, the line continuing beyond Battersby to Picton and Eaglescliffe. The line from Middlesbrough to Battersby was up to this time a relatively secondary branch. During the 1960s the Picton line was closed completely and Battersby became the operating curiosity it is today.

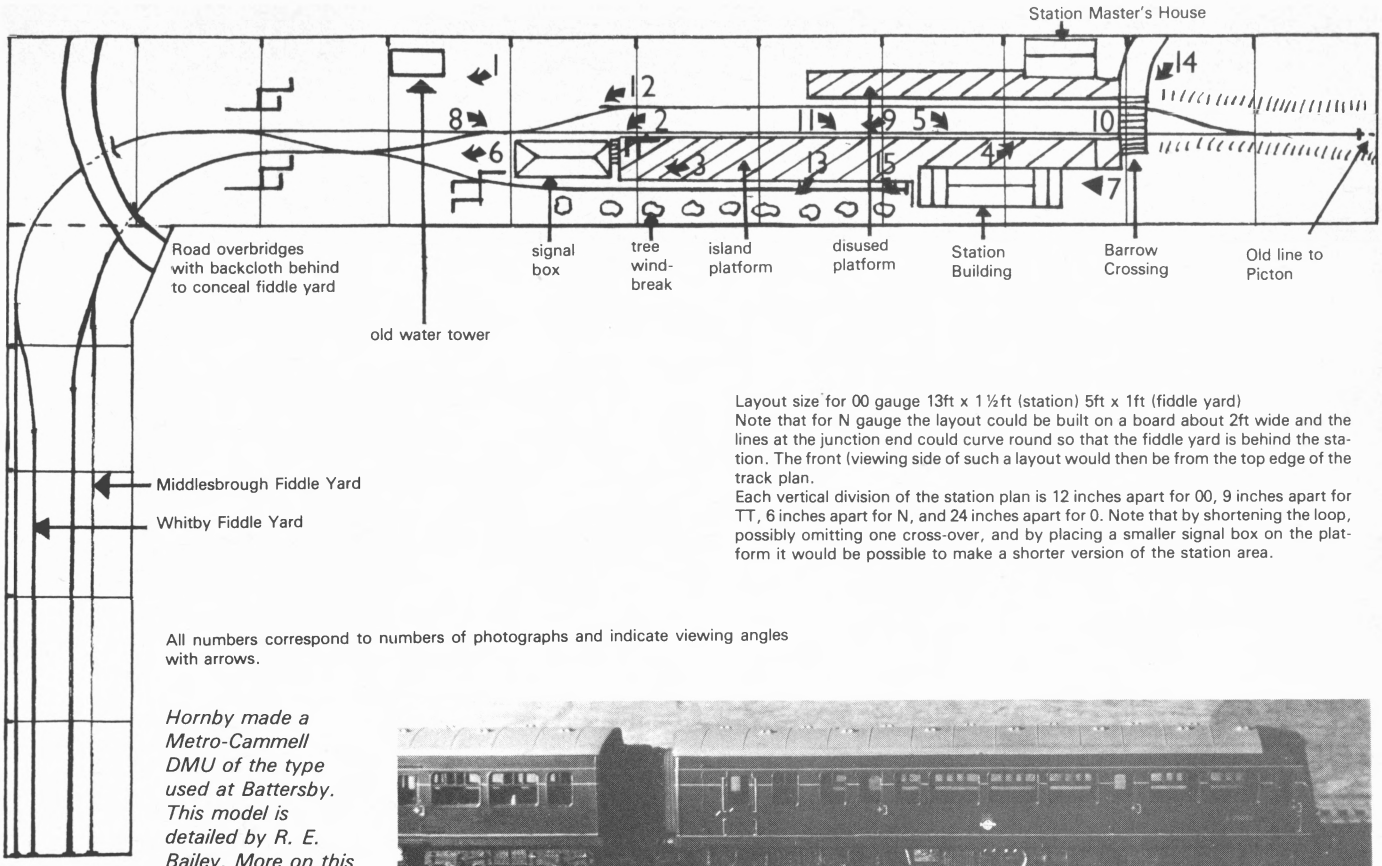
The station was originally much more important than it is today, with a small loco shed and marshalling yard. The water tower for the shed still stands isolated in a nearby field, and the site of the shed and yards are clearly visible. The track layout is extremely interesting and ideally suited for reproduction in a slightly compressed form as a model. The Middlesbrough line approaches around a very sharp curve, complete with check rail. In fact if British Rail had model railway style sectional track curves this would be one of them! A farm overbridge is situated over this curve. The Whitby line approaches on a more or less straight alignment crossing an ungated level crossing, complete with flashing lights for both road and rail and an obligatory 5mph speed restriction for trains, although this is sometimes ignored by drivers of late running trains!

The actual junction is immediately outside the station and consists of two crossovers laid end to end. As a rule the Whitby bound trains run into the bay platform, whilst those heading for Middlesbrough use the main platform line. The track layout is completed by a locomotive run-round loop which peters out in the cutting at the Picton end of the station. The signalling is of interest with junction signals controlling both approaches to the station. Note how both signal arms are level, there is no preference shown as in most model junction signals. A fixed distant also protects the curve on the Middlesbrough line. At the platform ends the bay platform has a standard junction signal, but that on the main platform is unusual because there are two home signals one above the other. I presume this is because of restricted clearances. The upper arm controls the Middlesbrough line exit whilst the lower arm is for the Whitby line. A few shunt signals complete the signalling picture.

The buildings are in remarkably good condition for an unstaffed station, helped no doubt by the fact that the signalman lives in the station house opposite the main station building. Thus the waiting room and toilets are in use, clean and unvandalised. The delightful station building is a typical North

(2) The classic scene on a British branch line. The signalman and driver exchanging tokens with the train on the move. The signalman incidentally is dressed like a farmer with wellington boots and trilby style hat. Note the bicycle propped up by the steps. The area to the right once contained sidings and the loco shed.

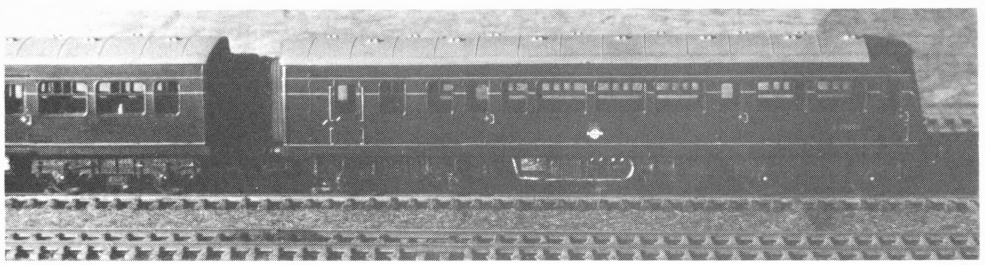
(3) A real period piece NER water crane still in working order. Mike's Models can almost certainly supply this type of platform mounted crane. Note the date and the initials NER on the white plate. Also notice the water bag holder, a large steel box. The new station sign makes an interesting contrast. The double arm junction signal is unusual.



Layout size for 00 gauge 13ft x 1½ft (station) 5ft x 1ft (fiddle yard)
Note that for N gauge the layout could be built on a board about 2ft wide and the lines at the junction end could curve round so that the fiddle yard is behind the station. The front (viewing side of such a layout would then be from the top edge of the track plan.
Each vertical division of the station plan is 12 inches apart for 00, 9 inches apart for TT, 6 inches apart for N, and 24 inches apart for 0. Note that by shortening the loop, possibly omitting one cross-over, and by placing a smaller signal box on the platform it would be possible to make a shorter version of the station area.

All numbers correspond to numbers of photographs and indicate viewing angles with arrows.

Hornby made a Metro-Cammell DMU of the type used at Battersby. This model is detailed by R. E. Bailey. More on this next issue.



Eastern Railway wayside station. Unfortunately at the time of my visit a Portakabin obscured part of the front and prevented me obtaining a really good photograph. However the building is symmetrical about the central door, so it should be possible to make an accurate model if desired. The signalman is obviously a keen gardener and both the station master's house and the station gardens are adorned with beautiful flower beds. Incidentally the signalman cycles from his house to the box with his pet mongrel dog; now that would make an interesting model set-piece!

The signal box is a typical medium sized North-Eastern box, now a little too large for present day requirements. Another interesting feature is the water crane still in

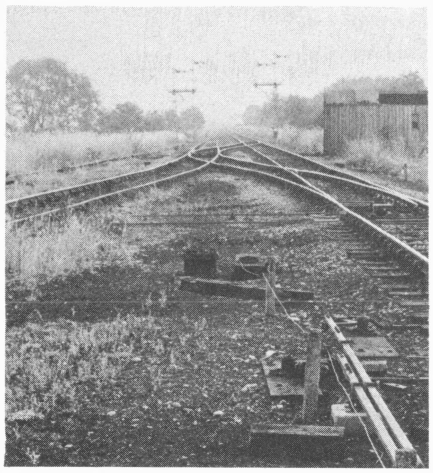
(5) The main station building seen from the junction end. The building is in red brick and the paintwork in blue and white. The Portakabin is used as a staff rest room for PW staff.

(4) The Picton end of the station showing the station master's house, now covered in ivy, the overgrown track leading to the dead end and the disused Stockton bound platform.

working order and retained because of the occasional use of the line in recent years for steam hauled trains. The old platform on the Picton side of the station remains, although in recent years it has been shortened to allow a large car park to be built for weekend hikers' cars. They never materialised, unfortunately.

The train services over the line at present are formed of Metro-Cammell or Birmingham Railway Carriage and Wagon Works DMUs. These operate all of the basically two-hourly service which runs Monday to Saturday all year, with Sunday services only in the summer months. On summer weekdays and Sundays some additional trains operate running to and from Darlington. On top of this at weekends, particularly in the summer, locomotive hauled specials from all over the country run to Whitby for the North Yorkshire Moors

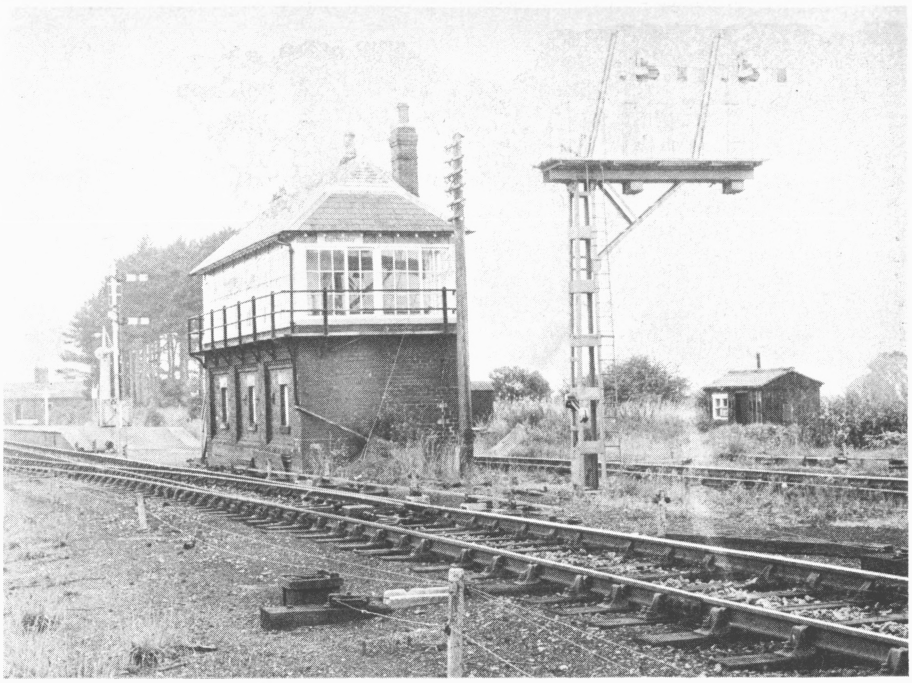
Railway at Grosmont. These bring Class 40s and 47s to the line, although no doubt other classes have hauled the excursions from time to time. One interesting feature of the multiple unit operation is that all trains must have two power cars, partly because of the steep gradients, up to 1 in 45 in places, but also to minimise the risk of total failure on the single track line. Train formations vary between two and eight cars for the DMUs; locally based units operating in two, three and four car sets. In winter most trains are two car sets only, except for the school services which can load up to six cars. Occasional steam hauled specials have operated at various times in the 1970s usually behind either a Class 5 or a K1 2-6-0 from the NYMR.



(6) The junction showing point rod detail, signalling and the general track layout. Notice how the lines separate vertically as soon as they are clear of the far cross-over.

(7) A close up of the station gardens. A typical NER milepost stands in the centre in pristine condition. Lettering is black on white.

Freight traffic is very light, consisting of two trains a week carrying household coal to the various stations on the branch. Usually the train is hauled by a Thornaby-based Class 37 and is made up of about a dozen 16 ton vacuum braked coal wagons, although the odd unbraked wagon creeps in frequently. Because of the reversal at Battersby the train is marshalled at Tees Yard with a brake van at either end of the train. In addition there are occasional workings to the docks at Whitby of bogie bolster wagons carrying steel.



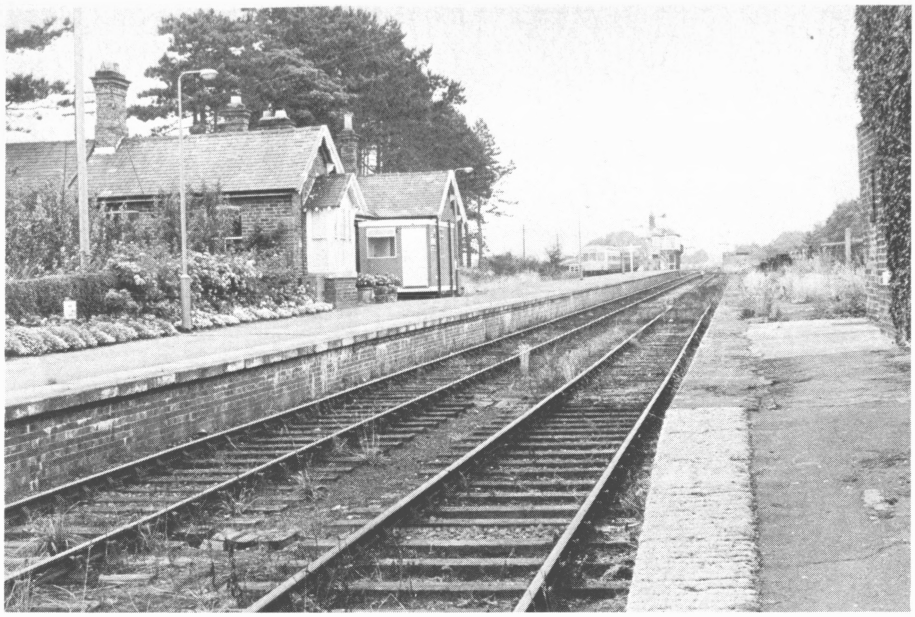
(8) The signalbox from the junction. Looking along the platform towards Picton.

However, things could have been very different. A few years ago there was a proposal to open a potash mine near Whitby. This would have lead to heavy double headed trains of bogie hopper wagons, of the type used by Cleveland Potash for carrying the mineral from the mine at Boulby to Tees Dock. Unfortunately the scheme foundered when it met considerable local environmental opposition, and the Whitby line thus lost a valuable traffic source. No doubt these trains would have been operated by Class 31s in pairs, or even Class 37s.

Modelling possibilities

The track plan shows a suggested L-shape layout. I have drawn it with relatively little compression to fit a space 11 feet by 1½ feet in 00 gauge. All dimensions can be roughly halved for N. The fiddle yard will need an area about 6 feet long. Obviously if you are prepared to compromise more, then the layout could be built in a smaller area without too much difficulty. Because of the ultra-simple track arrangement a 6-7ft version would be possible instead of 11ft, using a single railcar or 2-coach DMU only, and perhaps omitting one of the cross-overs. I envisage the layout built in a corner of the room, perhaps with shelves underneath, the fiddle yard removed when not in use and the layout covered by a removable lid. Built this way it could fit into a dining, or sitting room. Loco hauled trains of about five coaches can be comfortably handled in the station. Longer trains would need an additional engine to be attached at the rear of the train before reversal. I believe that this has happened at Battersby, so there is a prototype for that. I suggest that sectional curves be used for the Middlesbrough branch curves, even if the rest of the layout uses flexible track. For extra realism it would be worth fixing a continuous check rail to the inner curved rail by soldering an odd length of rail to pins stuck into the baseboard. The overbridge is in a convenient position to provide an exit to the fiddle yard. On the Whitby line I have replaced the level crossing with a further bridge. it should be noted that the Whit-

(9) The two locals pass. Notice the upper signal arm 'off' for Middlesbrough. As a rule the Whitby bound train arrives first, and waits for the Middlesbrough train (with main line connections) to come and go.



(10) An overall view looking towards the junction from the barrow crossing. Note the weed infested track, easily simulated with flock powders.

nient to operate.

Ideally if you were setting out to represent Battersby accurately you would want to scratch-build all the structures, but there are so many good kits that unless you particularly wish to model the actual North Eastern location you might as well use kits. There are numerous suitable kits available of small wayside stations and signal boxes, but beware of mixing incongruous styles of building.

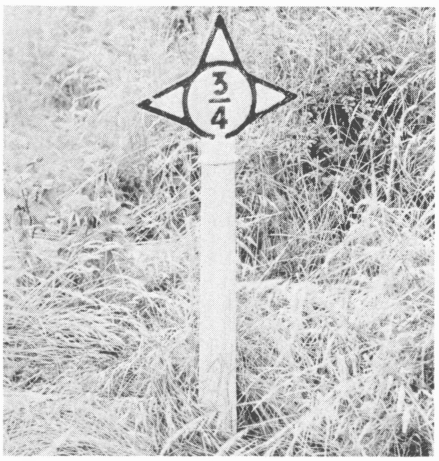
As far as rolling stock is concerned the obvious requirements are a Metro-Cammell DMU and a Class 37 and 47. Hornby used to produce the Metro-Cammell DMU but at present it is not available, although it is fairly easy to obtain on the second-hand market. However, I see no reason why the excellent Lima suburban DMU should not be used if you are not too fussy over types. MTK do produce a kit of the Metro-Cammell in various forms. You can obtain these kits from various sources including W & H in London and Hattons in Liverpool, though

Continued on page 629

(11) The train indicator, recently repainted, but not used now the station is a pay train halt. This would be the work of a few minutes in polystyrene strip. A few dots could suggest the letters.

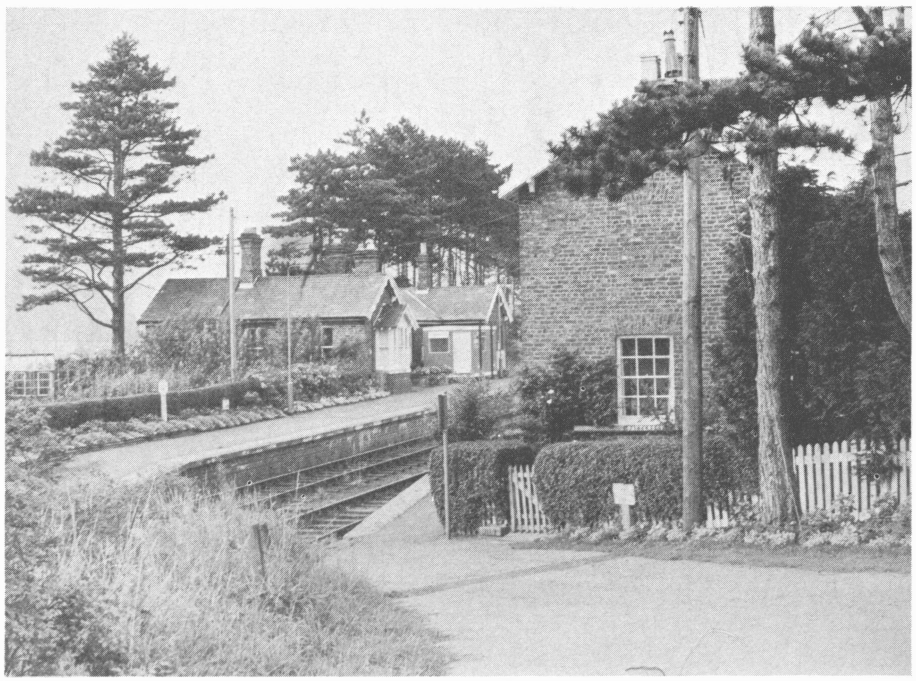
(12) The typical NER signal box, easily converted from some of the kits on the market.

All photos by Steve Rabone



(13) Another milepost, this time an intermediate star-shaped one. It is little details like these that bring life to a model, and they are only a few minutes work. This example can be found alongside the bay platform track.

by line climbs away at the junction. I suggest that you continue this climb around the curve into the fiddle yard so that this is at two levels. This will make it more conve-



(14) A country branch line idyll! The view from the station approach road. Note the old station bench now restored and in the old station master's cottage. Beyond the station can be seen the windbreak trees, Battersby is in a very exposed position.

Beginners Please . .

Some suggestions for getting started in 00/HO modelling from the wealth of models now available

It is probably true to say that the bulk of enthusiasts entering the model railway hobby today do so in the ever popular 00/H0 gauge size. Figures like 80% are bandied around when it comes to assessing just what slice of the total market is devoted to 00/H0, which is borne out by the proportion of models and equipment seen on sale compared to the other gauges. At the beginner's level a great many start off with a conventional train set, just as they've always done since the 'toy train' idea started late in the last century. In recent years the so-called 'ready-to-run' market has been setting the pace and the big manufacturers like Hornby, Lima, and the others have expanded their ranges and greatly improved the standards of quality, finish detailing, and performance.

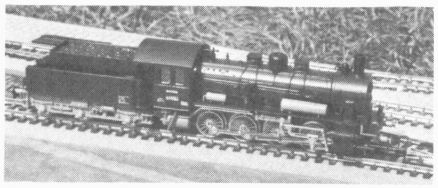
Buying a train set

The days when you had to start with a 'toy train', then later graduate to models with greater scale fidelity, are well and truly over. For there are train sets today (most of them, in fact) where the models included are right out of the standard range without being toy-like in any way. Therefore no initial purchase need be wasted provided you shop wisely. 'Wisely' is still an operative word, however, for there are makers, Fleischmann, Roco, Marklin, and Hornby among them, who make 'starter' sets featuring simplified locomotives and stock – the loco often being 'bogus' as a type, like the 0-6-0 tender loco in some of the simplest Fleischmann sets. They are well made and robust, but are definitely 'junior' items which will not satisfy the enthusiast. Worse still, if you buy one of these sets without much prior knowledge of real railways, you'll be extra disappointed, perhaps, when you find your prized model loco is nondescript as a type. However, the good news is that all these makers also make 'starter' sets in which the loco and stock is authentic. If you want to make a start, maybe for this year's modelling season, the list given here covers as many of the simpler sets we can find which we actually commend for consideration. All of them have locomotive models which are good enough to keep as you expand your interest. You are not likely to be disappointed with any of the sets listed.

You'll note that all the sets we list have a common feature in that they all feature one of the smaller types of locos. That word 'wisely' comes to the forefront again, because beginners usually have not had time to work out which way they will go in the hobby, and very often you'll have no real idea just how much room you'll be able to find for a layout. If you start off with a small shunting or secondary type of locomotive the chances are good that your investment won't be wasted because any type of layout can always use the smallest of shunting engines, and on some very small layouts a little locomotive will keep you going until you either expand your layout or get further funds to buy something more grand. You'll find plenty of glamorous express train sets on the market, more highly priced and looking most enticing. Nothing to stop you getting one of these to start with, of course, but we've often come across beginners who have done just this, then found they have really not had room to do justice to such a grand train – after which they go back to buying a small loco and a few wagons in any case. The train set makers and the model shops will love you for this, but if you have a restricted budget you need to act like a real railway management and invest wisely in what you really need!

Train sets get beginners off to a flying start if they choose wisely. This one (from our list at right) is worth looking for.

The advantage of buying a train set is that you get a complete package which can be set up right away to enable trains to be run, if only round an oval of track. Virtually all train sets these days have a power unit, or failing that a battery unit which will provide some basic power. This might sound a rather childish priority to old hands at model railways, but remember that newcomers of any age want some excitement right away to stimulate the imagination, and getting something running, however simple it is, is going to provide the urge to start developing something more ambitious. Some of the more expensive sets include turn-outs or other extra features, and if you have a siding in the basic set so much the better. If you buy a set which gives only an oval of track, then one or two turn-outs with enough pieces of track to make up sidings will be a good extra purchase, again with the idea of having some interesting operating, even while you think more about the sort of future layout you might want to build. In these days of discount prices you may well be getting quite a bargain. For example even at full recommended prices the Hornby R537 set costs about £43 but the total cost of all its constituent items bought separately is nearly £60. The same sort of difference is true for virtually all makes, and the saving is generally at least worth the price of the power unit.



There are many more good buys than we have room to list or discuss here. This Piko Class 55 0-8-0 is inexpensive (compared to others) but runs well and is a good performer – it is also very accurate.

In the haste to get away from the train set idea, a lot of modellers will naturally think in

No.	Maker	Title	Gauge/ Scale	Loco	Remarks	RRP
37021	Mainline	Coal Freight	00	J72	Good basic set, loco in BR finish	£37.50
54067-0	Airfix	Paddington to Birmingham	00	61XX Prairie	As above, includes card structures	£34.50
R537	Hornby	BR Diesel Freight	00	BR Class 29	Includes goods shed and siding	£43.95
104607	Lima	Road to Rail	00	BR Class 33	Includes container flat, container crane, and truck (battery controller)	£27.50
6315	Fleischmann	Start Set	H0	Maffei 0-4-0T	Simplest set in range	£31.50
2930	Märklin	Freight Train	H0	DB Class 89	See special comment in text	£39.27
80	Bachmann	Iron Star	H0	EMD F9	Good American set	£23.30

Notes

The above sets are selected and commended because the entire contents, including in particular the locomotives, meet the prime modelling requirements of scale appearance and authenticity. There are cheaper sets from Hornby, Lima, and Märklin, and alternatives by Fleischmann, but all of these have simplified or non-authentic locomotives and (in some cases) simplified rolling stock as well. Some further alternatives might include Mainline 37020 Light Goods, £27.50 (but J72 loco is in 'preserved' livery), Mainline 37023 Steam Sound, £55, (with 22XX tender loco with steam noise and whistle), Airfix 54070-6 Euston to Manchester, £39.50 (with Fowler 4F loco), Airfix 54063-8 Kings Cross to Newcastle, £40.95 (with BR Class 31 diesel and siding), Hornby LBSC Local Goods, £35.95, (with E2 0-6-0T), Fleischmann 6360 Profi-Set, £112 (with DB Class 261 diesel, loop line, and remote turn-outs), Märklin 2950 Freight Train, £57.16 (more elaborate version of 2930, with siding and more items). Roco and Piko offer good sets but these are not available in Great Britain. Bachmann, Tyco, and Life-Like sets sold on the US market are occasionally available in Britain — Victors stock Bachmann sets this year — an alternative is 101 Diesel Hustler (with EMD FT), £25.50.

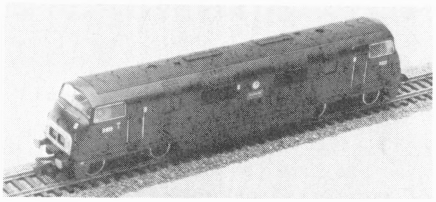
terms of a layout of their own concept or one that appeals to them from a book or magazine suggestion. This will probably be far from the train set concept, and most serious modellers go off in this direction. However, if you have no particular ideas or are the sort of modeller who wants to collect trains and just needs somewhere to run them, don't overlook the work the big manufacturers do to help. Fleischmann, Roco, Märklin, Hornby, and Lima (and possibly others) have all worked out ways of producing extension track packs which can be added to basic train set ovals to produce fairly conventional but more complex oval-based layouts of moderate size. Fleischmann offer a six stage, Lima three, Märklin four (for K track), and Hornby five stages, each supported by a track pack. Beyond that they all offer layout books (several in the case of Fleischmann and Märklin) which show how even more complex layouts can be built from either track packs or their track components. For the track extension schemes several of these firms sell what are loosely called 'Toporamas' – mats or colour printed base sheets which show the track positions and building positions – while the plan books for bigger layouts also give a guidance for structure positions and sometimes scenic work.

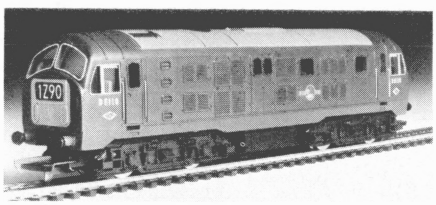
If you want an easy life, just want to 'play trains', or doubt your own ability to come up with anything more imaginative of your own, then by all means take a good look at the various makers' catalogues and study these track extension schemes or layouts made from their components. If you make such a layout it will certainly have a look of 'sameness' about it – rather like a demonstration layout in a shop window, of course, but on the other hand these layouts all work well because all wiring and control problems have been sorted out by the manufacturer. Most modellers in our experience would like to make a layout more in accord with their own ideas and not necessarily so rigidly dependent on ovals. But if you like long trains like APTs or HSTs or fast freights and just want a setting in which to run them, then this sort of 'track pack' layout should not be dismissed out of hand. We know of at least one layout built piece for piece in an area 8ft × 4ft straight from the Hornby track plan book. It works excellently, has a good 'big time' look about it allowing reasonably long trains to be run, and we've used it on occasion to track test some of the locos reviewed in this magazine. True it lacks some desirable operational niceties like destinations for the traffic, sources of traffic (stations excepted) and so on, but as a railway-like setting for trains to run it is certainly not to be sneered at.

The 'Alternative' train set

However, the majority of modellers who want to take the hobby more seriously make an attempt to come up with layouts of their own devising. Very often these get away from oval or circular concepts, with end-to-end or end-to-end and continuous style layouts (The Willow Valley Light Railway project in this issue is a very small example of the latter idea). You can get into the model railway hobby without having to buy a train set to start with. There is a very good case, indeed, for avoiding sets altogether as a beginner and buying exactly what you need in the way of stock and track to make a start. For many people this won't be a new idea, but these words are addressed specifically to newcomers. In this case you can decide your favourite company or type of loco, and buy what amounts to the equivalent of a train set in order to get started. As there are no rules in the model railway hobby, there is nothing to stop you starting off with an impressive express engine and some smart coaches, but as we've said earlier, it is no bad idea to make a gentle start with a 'go anywhere' small locomotive that will always find a home on your layout however much you expand it later. The second table lists some suggested models all of which were available at the time of writing (late 1981) and all of which we have actually tested or examined and can commend as worth having. We've included something for almost every area of interest in the 00/H0 field, though there are many more models available than those listed. There are also new models appearing all the time, of course.

Type		Maker	Country/Company	Gauge	Remarks
1400 Class	0-4-2T	Airfix	UK/GWR (or BR)	00	Very authentic and highly detailed model
5500 Class	2-6-2T	Lima	UK/GWR (or BR)	00	Good basic model
9400 Class	0-6-0PT	Lima	UK/GWR (or BR)	00	Good basic model
5700 Class	0-6-0PT	Mainline	UK/GWR (or BR)	00	Very authentic and highly detailed model
J13 Class	0-6-0ST	Hornby	UK/GNR	00	Only available in GNR colours — best of small Hornby locos
09 Class	0-6-0 diesel	Lima	UK/BR	00	Good basic model
20 Class	Bo-Bo diesel	Wrenn	UK/BR	00	Old model, but sound performer and can be detailed
89 Class	0-6-0T	Fleischmann	Germany/DB	H0	Very good small shunter
94 Class	0-10-0T	Fleischmann	Germany/DB	H0	Highly detailed, with excellent performance
80 Class	0-6-0T	Roco	Germany/DB	H0	As above
169 Class	0-4-0 electric	Roco	Germany/DB	H0	As above
300 Class	0-4-0 diesel	Roco	Holland/NS	H0	Smallest loco available
215 Class	Bo-Bo diesel	Roco	Germany/DB	H0	Compact all-purpose type
O & K MV9	0-4-0 diesel	Fleischmann	Germany	H0	Small industrial shunter
260 Class	0-6-0 diesel	Fleischmann	Germany/DB	H0	All-purpose type
212 Class	Bo-Bo diesel	Märklin	Germany/DB	H0	All-purpose type
S2 Class	Bo-Bo diesel	Mehanotehnika/AHM	USA/various	H0	Good small American diesel
S-12 Class	Bo-Bo diesel	Athearn	USA/various	H0	Excellent performer
F9 Class	Bo-Bo diesel	Bachmann	USA/various	H0	Good inexpensive model
Reading	2-8-0	Bachmann	USA/Reading	H0	Good steam outline US model
C16	0-4-0ST	Pemco	USA/B & O	H0	Good small 'dockside' loco
BN 150	0-4-0	Piko	Czech/others	H0	Small industrial Skoda shunter





Two of the best of British 00 gauge diesel models are the Mainline 'Warship' (top), now also available with a sound and horn fitting, and the Hornby Class 29 which is also in the R537 set – both now 'old timers' as the originals are out of service.

You can buy rolling stock in easy stages, say three or four items to start with. What you buy will obviously depend on your area of interest, but we commend freight vehicles to start with. Most passenger vehicles are very long and long vehicles are less happy than small freight vehicles on small or tightly curved layouts. Our suggestion is to see what space you have for a layout, what sort of layout and setting you'll build, and so on, before investing too much money in passenger coaches. As an actual example, long BR Mk I or DB 'Silver Fish' coaches would look quite ridiculous on a small oval layout such as the Willow Valley Railway featured in this issue. Three such coaches would take up a large arc of the circle, so making it looking even smaller than it really is, they would suffer ugly overhang on the tight curves, and would probably be most inappropriate in the very rural setting. Ideal choice here would be small four-wheel coaches as made in kit form by Ratio, or made in German prototype by firms like Roco, Piko, or Fleischmann. Or a small railbus might be the answer for passenger services . . . in other words think well ahead before buying and don't just make impulse purchases. If you are a complete beginner, please remember that, with a few exceptions, you can mix makes in the same scale.

All British prototype models currently available ready-to-run will run on standard Code 100 track and will couple up with each

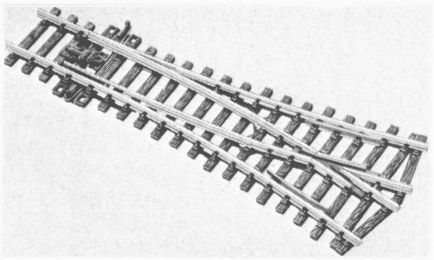
other using the tension lock couplers which are fairly standard now. Similarly most overseas models will run together, though, in the case of German models there are two forms of coupler, Märklin and Fleischmann, and you need to standardise on one or the other. All the makers offer interchangeable couplers, however, to facilitate this and Roco make a 'close coupler' which is different again. All American prototype models should run happily with each other because standardisation between brands is much more complete on ths US market. There is the cheap 'horn-hook' coupler on virtually all ready-to-run models and the Kadee magnetic is a viable alternative. With a few exceptions, most American prototype HO models have the RP25 wheel section which will run not only on the standard Code 100 track but also on the finer Code 70 track (British and European models won't do this unless RP25 wheels are fitted). There are exceptions to this general rule for American models which European modellers should check – some models have deep flanged wheels and some have Märklin type couplers which are incompatible with horn-hooks. Mostly the Mehanotehnika or Life-Like or Rivarossi models are the offenders here. You may need to make a coupler change to enable them to run with other American models. The European type wheels and couplers seem to be fitted by the makers specially for Europe since the same models are sold in USA with horn-hook couplers and RP25 wheels.

Track

Virtually all ready-made sectional track available for 00/H0 gauge today is compatible make with make, and is to the height known as Code 100 (this is a reference to its depth of rail section, .100 inch – Code 70 is .070 inch, and so on). Code 100 track in this scale is actually equivalent to the very heaviest weight of track you would see in real life on heavily used main lines. Code 70 or Code 80, etc. are the nearest equivalents to average weight track found in real life. However, Code 100 looks very acceptable and looks much less 'heavy' when it is toned down by weathering. With the exception of wheels to RP25 profile and the old BRSMB 'Scale 00' wheels, where finer flanges are used, you have to use Code 100 track with current British and European H0/00 models. You'll find that virtually all the makes of sectional track will join up with other makes even if the sleeper spacing is a little different and the geometry varies. Most makers produce yard or metre lengths of flexible track in addition to the sectional track. It is difficult to generalise on track and, in any case, it is well illustrated, complete with geometric diagrams in all the model train catalogues.

However, in addition to the individual makers we have in Britain the Peco company whose well-known Streamline range is widely available. This offers flex-track plus a good range of turn-outs to suit virtually all requirements. In addition Peco make a superior range of sectional track, called Setrack, which is not only sold in the Peco range but also forms the basis for the Mainline and Airfix track systems.

Thus there is no real problem with track



Peco Setrack and Streamline turn-outs have a well sprung action and a minimal length of dead frog, putting them top of the list when it comes to reliability in the critical area of turn-out performance. They can be used with all other Code 100 tracks.

other than acquiring what you need, and with careful utilisation even the track which comes in your first train set can be used in all future layouts you might build. Steel, brass (eg, Fleischmann) and nickel-silver are the various materials from which tracks are made. Steel tends to be used by the mass market manufacturers, but some firms offer steel or nickel-silver, some brass or nickel-silver and some nickel-silver only. Roco and Peco are examples of the latter. Nickel-silver costs a little more than steel, but if you can run to it, it is to be commended as the best choice. It has better conductivity, stands up to temperature extremes, and stays cleaner longer. However, any of the materials can be used, and furthermore they can be mixed with each other. The Willow Valley layout in this issue deliberately uses all three materials from several makers to prove the point. We used oddments from various sources, though if we had set out from absolute scratch we would definitely have bought nickel-silver track to start with.

You will need power connectors to get your electricity into the track. Trains sets include a terminal rail or power connector by the manufacturer concerned, but if you are buying track components separately you have the choice, soldering your own connections (on a proper permanent layout) or the use of power connectors as before. Most makes work fine but we have found the Fleischmann and Peco Setrack units to be the best.

Everything so far considered is Code 100 track with sleepers (cross-ties) which are actually H0 size (1:87 scale), even though the track is labelled H0/00. This won't worry many people as the smaller, closer-spaced sleepers, when used with 00 trains give a somewhat 'finer' look. However, if you want 00 track with sleepers to British (1:76) scale size, then the Gem range might appeal. This offers turn-outs and flex-track in the usual style. To order only, Gem will also supply Code 90 track at no extra cost, giving a finer look. More details on this from Gem.

Another firm worth mentioning is the Japanese maker Shinohara (imported to the UK by Victors) who offer turn-outs and flex-track in Code 100, but offer the whole lot over again in Code 70 size for those running American trains with RP25 wheels.

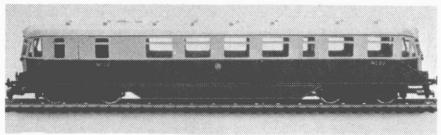
Lastly there are some smaller firms, notably Scaleway who offer flex-track in BRSMB 'fine 00' style with scale bullhead rail. Beyond this you are into the idea of hand-made track, but you will certainly not be classed as a beginner once you are in this area.

Turn-outs

These we consider separately because they could offer you more problems than the track itself. All the turn-outs offered in the manufacturers ranges are of the 'dead-frog' type which are the easiest to manage from the point of view of the electrics. In theory they look after themselves from the control standpoint. The frog in each case is plastic to stop the polarity of the rails changing when the point direction is changed. On most frogs the plastic area – the 'dead frog' – is quite big, and this leads to the frustration of stalling which upsets and disconcerts many newcomers. With trains running at 'toyshop' speeds it may not happen because the train has enough momentum to carry it over the dead area. A slow running train may well stall, though it is essential to point out that recent locos have much better pick-up arrangements than was once the case. Therefore dead frogs are not always the problem they once were. Another problem is uneven track which can also cause stalling on dead frogs, though this is not so relevant here. Cutting a long story short, if you are buying turn-outs, the best ones in our experience are Peco Setrack or Streamline (all of which have minimal dead frogs) or Fleischmann. Cases can be put for others, such as Roco, but the Peco and Fleischmann turn-outs seem to give the smoothest ride with the greatest electrical reliability. If they are slightly more expensive than others they are certainly worth it in the long term.

Virtually all turn-outs come as hand-operated items. You can buy various mechanical levers and frames for remote operation, or they can be motorised for electrical remote operation, again a matter well covered in the different makers' catalogues.

Peco Streamline also offers 'live-frog' turn-outs, as do Gem. These offer electrical conductivity right through the point, so the stalling problem due to loss of power on the pick-up is avoided. However, extra wiring is necessary, plus rail breaks to ensure that the track polarity is not reversed and this type of turn-out is really outside the needs of the beginner. Fleischmann turn-outs can be self-isolating or non-isolating for they feature



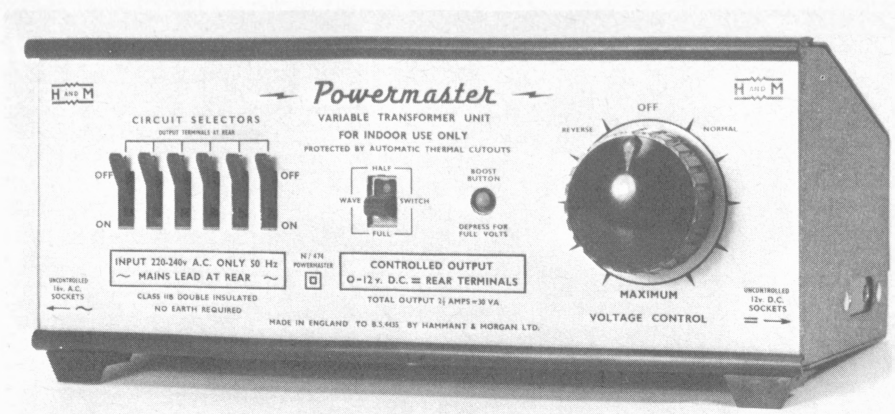
Don't rush into passenger stock purchase. The Lima diesel railcar may be better on a small layout than a conventional two-coach local train – it's shorter.

spring clips which can be fitted or removed at will to change the mode.

Finally, if you are starting completely from the beginning and space is no problem you might like to know about Conrad H0 track. This is a finer scale track already ballasted, but a complete sectional system. However, it has gentle radius curves so needs more space for a given layout than Setrack or other section tracks would take.

Power units

The trains and the track will get you going, and if you start with a train set you'll get a power unit too. If you are buying separately there is a good range of units. We particular-



ly commend the smaller items in the H & M range. The Clipper is a good one, with the Duette or Powermaster if you have ideas for further expansion later. W & T do a good little power unit ideal for small layouts, but these days virtually all the power units in the different major ranges will do a good job for you, particularly for a small layout. ECM have some more sophisticated equipment, notably in their Compspeed range, worth considering if you are starting from nothing and buying bits and pieces to suit your needs. As a beginner with a small layout you won't have to do much more than we have done on the Willow Valley layout – just join up the wires to the power connector and the self-isolating dead frog turn-outs will do the rest. If you want to get on to more sophisticated things early on, such as electrically operated points, look at the Peco, Fleischmann, Hornby, and Lima catalogues and you'll see they all offer quite simple remote control systems for turn-outs, signals, and the like. Märklin do the same for their own AC system.

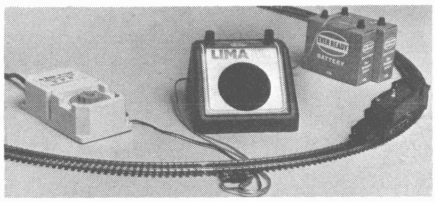
What about the 'independent control systems' – the so-called 'two wire' set-ups like Zero-1 which offer command control? Well, our advice for beginners is to forget them for the time being and concentrate on getting your basic layout running by conventional control methods. Later on if your layout expands and as your experience increases you can think about them some more.

Märklin

This sytem demands a special note because it depends on 16 volt AC control, not the two-rail 12 volt DC which all other 00/H0 systems use. Märklin started back in the days when three-rail was the norm, long discontinued by other makers. Märklin offered

Even if your layout is set up in temporary fashion while you work out a future layout scheme, you can still dress it up very quickly with buildings of all sorts. Card model like these from Superquick are easy to build – the other useful range is from Builder Plus. Railway buildings are included in both ranges so you can make an 'instant' station or freight shed.

Above: *H & M Powermaster is a good well-proven unit with provision for later expansion of your layout.* **Below:** *Inexpensive sound unit comes from Lima, linked to the power unit to give a degree of synchronisation.*



stud contact, however, where the actual centre third rail was replaced by 'studs' which stuck up in the middle of each sleeper. This was an improvement visually on the centre third rail, and a 'skate' below the loco picked up the current. The advantage of the system was (and still is) its electrical simplicity (in terms of control) and its reliability. For example the Märklin remote control items are particularly easy to fix up and problems of reversed polarity which sometimes arise (eg, in return loops) in two-rail DC do not arise with Märklin's AC system. Märklin go for quality, so the models are good but they are often more expensive than other makes. If you go for Märklin you are stuck with its unique system, which will not appeal to everyone. Mostly the models are German with some other countries also covered, all in H0. The original Märklin track is known as M track and is old-fashioned in appearance. Recently K track, which resembles Code 100 two-rail track, has been produced. This is very realistic but more expensive than two-rail track of this type. However, Peco produce a clever stud contact strip which can be used with their Streamline track or, indeed, other two-rail tracks so that the Märklin system will work on non-Märklin track. Märklin train sets at present only come with the old M track, so although a 'M to K' converter track is available, anyone going for Märklin might prefer to buy the track and the trains separately, purchasing K track instead of M track. One last point to note is that many Märklin locos are produced alternatively in two-rail form under the Hamo name, while some shops offer a two-rail conversion service for Märklin locos. Current Märklin models available in Hamo form are 8302, 8382, 8392, 8393, 8399, 8328 and 8428, but stocks are limited and Märklin are doing Hamo models now on a 'one run' basis against orders.

Battersby Junction from page 625

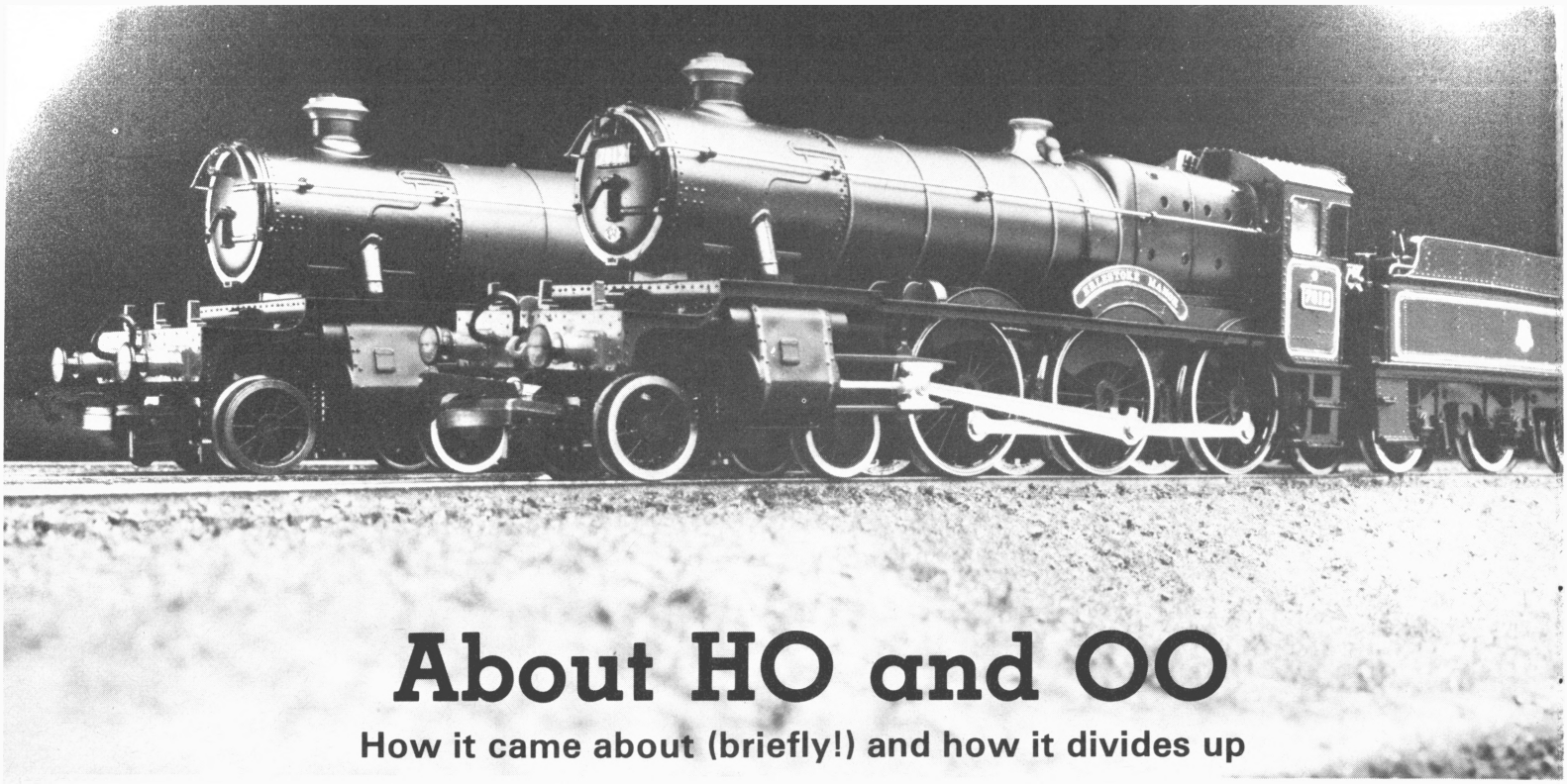
they are not really suitable for beginners. Hornby also produce a Class 37 and 47, whilst of the other types seen from time to time Airfix produce the Class 31 and Jouef the Class 40. Steam outline locos seen currently on the line can be represented by a Hornby Class 5 in black LMS livery and renumbered as 4767 *George Stephenson*. Also seen from time to time are locomotives in transit to and from the NYMR. In recent months these have included a 'Warship', a 'Western' and the original Class 31, D5500. These locomotives are all available in model form. Perhaps the most startling of all to traverse the line though was a Deltic. In August 1981 BR ran several Sunday specials from Stockton to Whitby under the name 'Deltic Special'.

In N gauge the situation is much the same. Graham Farish produce the Class 37 and 47 together with a Class 5, Lima make a Class 31 and Class 55, whilst MTK manufacture a Metro-Cammell kit. Incidentally, you will need a buffet car for those excursions as many of the 'Merrymakers' have one in their formation. Who says you can't have a Class 47 on a buffet car express on a single track branch?

So there you have it, a delightful and unusual station on a single track line operated in the grand manner, complete with full signalling, token operation, neat stations and a frequent service. What a pity those potash trains never happened; still, one day perhaps when the world runs short they may get round to opening the mine. Still *you* can run them. Imagine a pair of Class 37s on say about 15 Lima hopper wagons, painted dark green and lettered 'Cleveland Potash'. Then round the corner creeps a two car Metro-Cammell DMU into the bay. Truly an ideal project for the modern day modeller.

While the foregoing suggestions suppose you'll want to make Battersby either as itself or as a slightly fictional branch in similar style in the same area, using appropriate locos and stock, there is nothing to stop you 'moving' the whole set-up to some other favoured area – say the west, south-west, or Scotland and running locos and stock as appropriate. If you just use the track plan you could take the liberty of adding a short bay siding behind the disused platform, perhaps with a shed for parcels traffic. The potash mine off stage could also be added in for the extra traffic it creates.

(15) Another detail suggestion. A rail-built sleeper at the end of the bay line.



About HO and OO

How it came about (briefly!) and how it divides up

What is loosely called H0/00 gauge does, in fact, embrace two distinct scales, an idea which still confuses quite a few beginners. The H0/00 designation is common in catalogues, box lids, and so on. It so happens that quite a few models and accessories are common to both scales, while the track gauge is the same, hence the loose application of the term. The story about the two scales is quite a long one, but very briefly it all started around 1920 when Bing produced a miniature tinplate train set with a track gauge around ⅝ inch, appreciably smaller than the size of 0 gauge tinplate models which were then the most popular mass market models and the smallest of scales sold commercially.

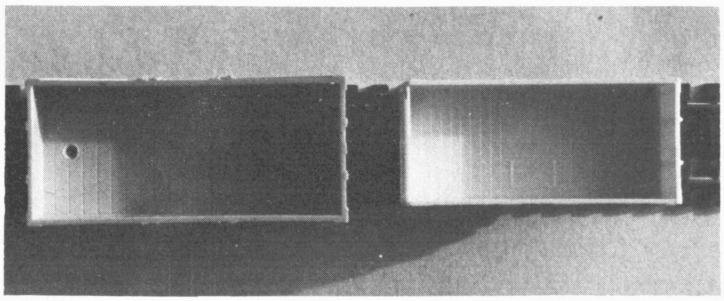
The small models led serious enthusiasts like Henry Greenly and Stewart Reidpath to experiment with some scale items to this size. As gauge 0 was scaled at 7mm to 1ft, it was logical enough to try half that size, 3.5mm to 1ft. Nomenclature was not too precise in those days, and an article on H0 by Stewart Reidpath in the very first issue of *Model Railway News*, in January 1925, was headed 'The possibilities of 00 gauge'. This was already conflicting with ideas by Henry Greenly, one of the commercial advisers to Bassett-Lowke, who had advocated 4mm to 1ft scale (which he called 00) on 16.5mm track in the early 1920s. So right from the start of publication of a specialist model railway magazine there was controversy over H0 and 00 which has never really died down. In essence Greenly had increased the body scale of models to 4mm to 1ft because British locos and rolling stock are built to quite restricted dimensions (compared to the trains of other major nations like France, Germany, and the Americas). To get small-boilered loco bodies over the early electric motors the bodies were made bigger. This also overcame another problem which was the width of loco valve gear and rolling stock axle-boxes. They were necessarily of over-scale thickness and if the body was scaled at 3.5mm to 1ft, the axle-boxes and motion stood wider than the bodies above them. In those days there were few pioneers and even fewer manufacturers. There was no real regulation and while the 3.5mm and 4mm to 1ft debates went on there were small accessory firms making parts and kits for British models in the two different scales, both using 16.5mm track gauge.

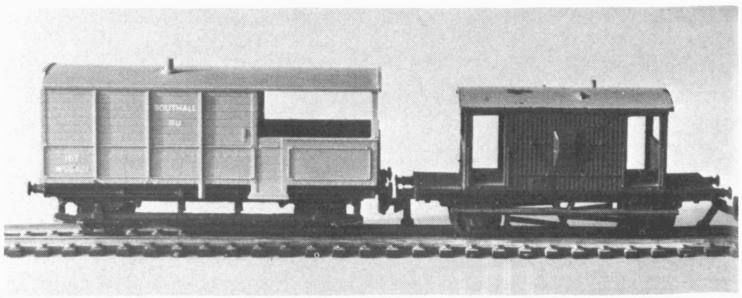
The coming of Hornby-Dublo in 1938, the first mass-produced models of wholly British concept, scaled at 4mm to 1ft, using 16.5mm gauge track really committed the British mass market to 00 with its distorted gauge-to-scale relationship, for all subsequent makers post-war to date followed this path with very few exceptions. (Yes, we know we left Trix Twin out of this story, but it was basically German in origin and was not a 'scale' system with the fidelity which Hornby-Dublo went for).

Before World War 2 there were quite a few British modellers building British prototype in H0 but since then anyone trying this has followed a lonely path. The late Jack Nelson was one of the pre-war workers who carried on post-war in H0, producing a noted layout based on the LNWR. Jouef/Playcraft, Lima in the early 1970s, and Fleischmann in the late 1970s all attempted to produce British H0 ranges but with the bulk of the market already committed to 00 none of these attempts made much headway. Currently only the Fleischmann 'Warship' and Bulleid coaches can be had as British H0 models (and very nice too), but some Lima H0 can be picked up second-hand. If any readers have British H0 layouts and are still active in British outline H0 it would be interesting to hear from them.

The current pattern for British ready-to-run and kit models is very firmly 00 gauge, 4mm to 1ft running on 16.5mm gauge track. Most modellers accept the under-scale gauge and many have probably never considered any alternative. If you are not satisfied with it, however, you have to switch to EM or P4/S4 where the going is slightly harder (in that little or nothing can be had off the shelf and 00 items must be re-wheeled or re-gauged). This is outside the scope of this article, however, but we'll be covering these gauges later. It is worth saying in passing that the Airfix/GMR models in particular were designed for easy conversion to EM gauge, so if you contemplate a switch to these wider 'true' gauges later on, this is a brand name to think about when buying

Direct comparisons between the relative sizes of H0 and 00 are possible if British models in both scales are seen together. **Left:** *Standard P0 coal wagon, the 00 version on left, is nearly 15% bigger in bulk than its H0 counterpart on the same track.* **Right:** *Wrenn GWR Toad with Jouef/Playcraft BR brake van to its right, an H0 model. In real life both are about the same size.*





stock.

Things were different overseas. By the time model railways became a widespread hobby in USA in the early 1930s, the 00 and H0 controversy was known about across the Atlantic. Both scales had their followers but in USA 00 gauge (4mm to 1ft) was settled at 19mm (pretty close to the present 18.83mm of P4/S4) while H0 stayed at its correct 3.5mm to 1ft scale on 16.5mm gauge. H0 soon won the battle, though even today there are still a few active American outline 00 modellers. There wasn't the problem with dimensions for American models, for American railways have a more generous loading gauge (and hence bigger locomotives) than British railways.

Putting it in scale ratios, H0 gauge at 16.5mm is 1:87 proportion and is scaled at 3.5mm to 1ft. 00 gauge at 16.5mm is 1:76 proportion and is scaled at 4mm to 1ft, though the track gauge (at a scale 4ft ½in) is, of course, grossly under-scale. In volume terms there is nearly 15% difference in size between H0 and 00. As British trains are small, however, when reproduced at 1:76 scale they work out roughly the same size as foreign models at 1:87 scale.

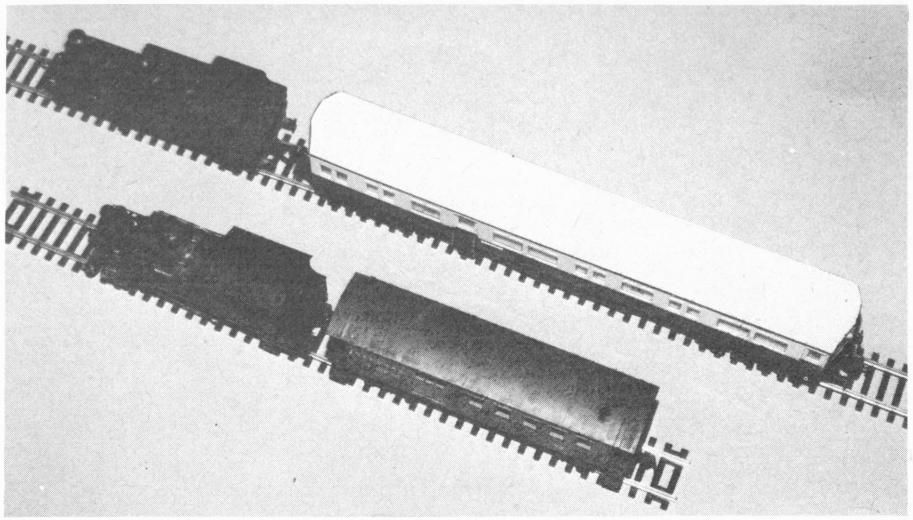
In the rest of Europe, where H0 started in the 1930s, there was never any need to worry about distortion because, again, the prototype was mostly big enough to house the motors and accommodate chassis widths, etc. Nevertheless, several big makers produced models with slightly over-scale bodies (1:82 scale) until quite recent years.

What this story amounts to is that we have the classic example (as in some other areas) of Great Britain being out of step with the rest of the world. And British outline modellers are stuck with 00 gauge unless they change over to correct EM or P4/S4 standards by their own efforts. The alternative, if you prefer a 'pure' gauge-to-scale relationship, is to model H0, and it is probably this desire which has made European or American modelling so surprisingly popular in Great Britain. (Overseas travel and Britain's position between mainland Europe and USA has also obviously contributed to the interest as well.)

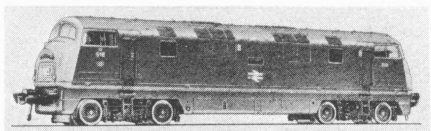
British 00 gauge

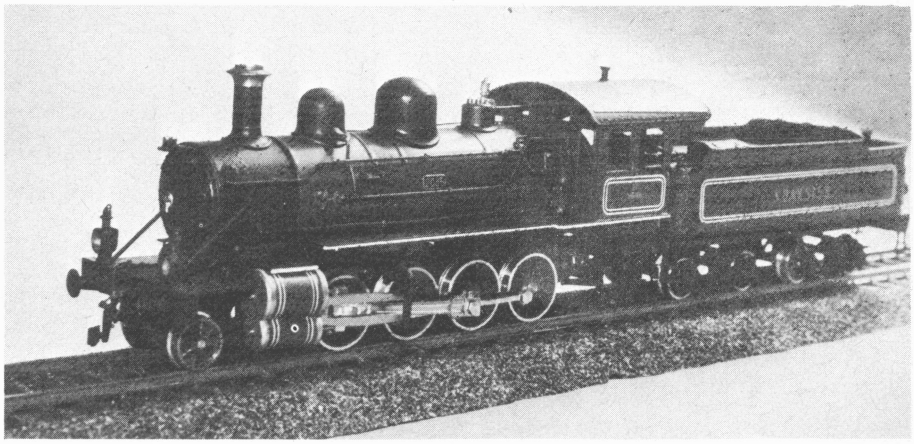
The model range here is vast, with Mainline, Airfix, Hornby, Lima, Grafar, and Wrenn providing mass-produced models which are well-known and widely sold. Peco, Wills, Ks, Gem, Ratio, Merit, and hundreds of other companies produce a mass of kits and accessories and there are no obstacles today to anyone modelling British over a wide area, though modern age, BR steam, and the 'Big Four' are the main periods catered for. If you prefer pre-grouping or the Victorian eras you are much more out on a limb, but not impossibly so for there are ways and means of modelling (and quite a few kits) suitable for these periods also. All this wealth of material is as near as your local model shop, and there are many major mail order suppliers like Hadley, Hattons, M. G. Sharp, Eames, Kings Cross Models, W & H, and many others who will serve your every need by post if you have no local model shop. See their adverts and phone them first if you have any queries before purchasing. Though you may start off with ready-to-run locos, of which there are now plenty of good ones, don't forget the firms like Wills, Gem, Ks and others who make cast loco kits. For relative beginners, remember there are good 'body line' kits, such as the Wills MR 'Flat Iron' 0-6-4T and the Gem 56XX 0-6-2T which take the Hornby 0-6-0 chassis and fill gaps in the ready-to-run ranges.

If you are a beginner, get hold of all the catalogues and leaflets you can, and remember that because of the wide availability of models and the sheer number, 00 gauge is the easiest of all scales and gauges for successful modelling.

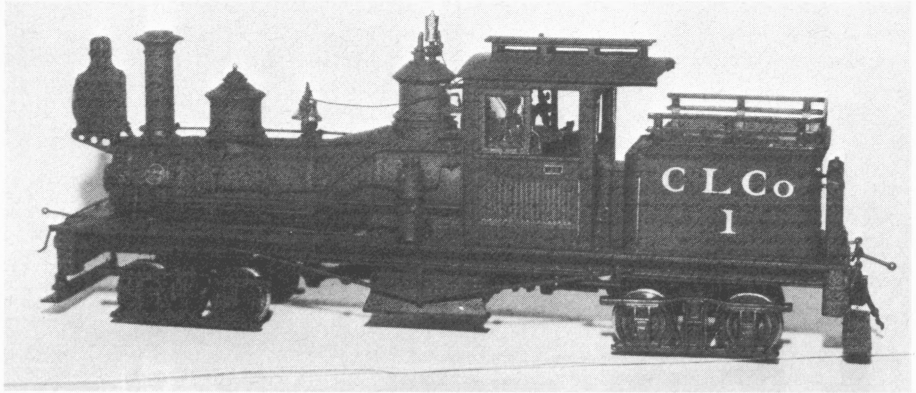


Another size comparison. Small 00 loco and coach seen against a comparable H0 loco and coach. In real life these short trains would be about the same length. **Below:** *Fleischmann 'Warship' is the only current British prototype H0 loco.*





Top of the market are brass locos, all hand-made, and available for both 00 (British prototype) and HO. **Below:** *This Shay is fully detailed inside and out with motor fully concealed in firebox.* **Above:** *Bavarian 2-8-0 is by Fulgurex, an example of European brass. Most prices are in three figures, but some cheaper models can be had.*



European H0 gauge

You can't fail to see that German models are widely available in Great Britain, and names like Roco, Fleischmann, Lilliput, and Märklin are seen in very many model shops, with a generous selection of locomotives and stock. In fact, it is almost as easy to model Deutsche Bundesbahn in Great Britain today as it is to model GWR! Rivarossi offer several German models, while Piko is a big range from East Germany offering some bargains. Prices overall are probably a little up on British outline 00 models, but there is little in it, and some models (specially in this age of discounts and special offers) may well be cheaper. Quality is high throughout and it

is difficult to buy a German model and be disappointed. There are French, Dutch, Belgium, Scandinavian, Spanish, and Italian models to be had. The Spanish models are from Electrotren, but the others are from the German or Austrian makers listed above. So if you have any favourite European country, or experience of its railways, there is little to stop you modelling it. Howes, Hadley, Victors, Platform 3, Beatties, Eames/Kings Cross, Sharp, Keiths, and Just Continental, are just a few major retailers, all advertising mail order, who can supply you if you have no local model shop stocking Continental models. With H0, of course, the gauge-to-scale ratio is exact so you don't have to have any worries about dimensional discrepancies. Most accessories, such as Faller, Pola, and Kibri kits, Preiser figures, and Viking cars, to name just a few are actually scaled for H0 rather than 00, and they are widely available.

American H0 gauge

Less widely available than German H0, there is nonetheless no problem about supply it you want to try American or Canadian modelling. Victors, King Cross Models, M. G. Sharp, Keiths, TSA Walsall, and Hadley are among shops selling American models, the first three named having the most complete selection (better than some shops in America, in fact) known to us. No doubt there are others (Beatties, for example, sometimes have some American models). If you have no local stockist, this is an area where you will be much dependent on mail order. With American prototype in H0 the selection is truly vast and overall prices are probably the lowest of the lot among models in the H0/00 category, though recent exchange rate fluctuations may have some effect. Quality in general is very good. Brand names to watch for are Bachmann, Life-Like, Model Power, Pemco, Athearn, Roundhouse, Atlas, Rivarossi (AHM in USA) and there are many others. The Jugoslav firm of Mehanotehnika sells its products under that name in UK though they may appear under such names as AHM and Life-Like in USA. There is a big following for highly priced brass models, but the rock bottom 'budget' level is well catered for by firms like Life-Like and Bachmann. Just now there are still some Atlas diesel locos around (a discontinued line) at low prices, but worth looking for as they were made by Roco to Roco standards of precision and engineering. Relatively few models are actually made in USA, but the degree of standardisation and engineering is generally excellent from countries of manufacture which include Hong Kong, Taiwan, and Italy.

Most American prototype models are very accurate, though bogus colour schemes abound. There are a few pitfalls, however, and here are two classic examples. **Top:** *The Mehanotehnika EMD SW-1 looks good, but it is stretched by over five scale feet to fit a standard chassis. Truck wheelbase is too long also.* **Above:** *Plymouths and other small diesel switchers look pretty but all the ready-to-run models known to us are much over-size to fit standard power units. This Bachmann example is good for 0 gauge narrow gauge but is grossly over-scale for H0 – and ATSF never had them either! Check reviews or references before buying if these sort of errors worry you.*

American modelling has some advantages which help the modeller – for example auto-couplers in real life, sharp radius track more common in real life than elsewhere, and good 'compensation' of rolling stock because there are no rigid wheelbase vehicles. You can go 'old time', steam age, or contemporary with no problems at all because of the selection available. Most of the shops listed above have good selections of US railroad books (as do specialist book sellers Albion Scott Ltd) if you want to study the subject some more before considering going off in this direction.

There are some pitfalls, a common one being the coupler problem mentioned previously, and another being the provision of all too many bogus colour schemes to mislead the unwary. It may not worry you, but if it does there also happens to be a very good choice of company markings sold in transfer form enabling repaints to be accomplished reasonably easily. Colour schemes in USA in the old days or now are generally simpler (eg, all black steam locos) than was the case in Great Britain. The modern era is particularly colourful if you like your trains to be bright and variegated.

Useful addresses

Here are some addresses of various firms mentioned here or in the previous article. Please note that the nationally known brand names are not listed here. Eastern Models, 29 The Knoll, Hayes, Bromley, Kent (UK distributor for Piko, Pemco, and Mehanotehnika). Gem Model Railways, 31a Rhos Road, Rhos on Sea, Clwyd, North Wales (00 track and many cast kits for locos and rolling stock, plus useful accessories). Howes, 9-10 Broad Street, Oxford (major Roco and Fleischmann stockist, plus wide stocks of other German models). Hadley Hobbies, 131 Middlesex Street, London E1 (Very wide selection of British, European, and American 00/H0 models and accessories, plus Conrad track system). Victors, 166 Pentonville Road, London N1 (Specialist in American and European models, plus books, and importers of Bachmann and many other lines). Kings Cross Models, 17 York Way, London N1 (very big selection of British and American models and accessories, plus books). TSA Trainshops, 130 Walstead Rd, Walsall and 22 Pinfold Street, Darlaston (American train specialists). Wills Finecast, Lower Road, Forest Row, Sussex (many 00 loco kits including useful 'body line' models for existing chassis, plus very good range of plastic kits covering small structures). Just Continental, 35 Boldmere Rd, Sutton Coldfield, West Midlands (Specialist in American and European models). Kemp Models, 4 Queens Rd Quadrant, Brighton, Sussex (distributor for Scaleway track). Hamblings (Models) Ltd, 29 Cecil Court, Charing Cross Rd, London WC2 (very good selection of models, kits, and parts for 00 gauge – also good book selection on British subjects). Ratio Plastic Models, Sturminster Newton, Dorset (a good range of kits for those wishing to progress beyond 'ready-to-run' 00 gauge). H & M Ltd, Apem Estate, St Albans Road, Watford, Herts (very good range of control equipment to suit all requirements). ECM Control Systems Ltd, 80 Blatchford Road, Horsham, Sussex (a good range of more sophisticated control systems). Crownline Models Ltd, 60 Queen Street, Maidenhead, Berks (a good range of detail and conversion kits, intended specially for altering or super-detailing ready-to-run models). Liliput Model Railways (UK) Ltd, 4 Station Road, Bala, North Wales (UK distribution of Liliput H0 models).

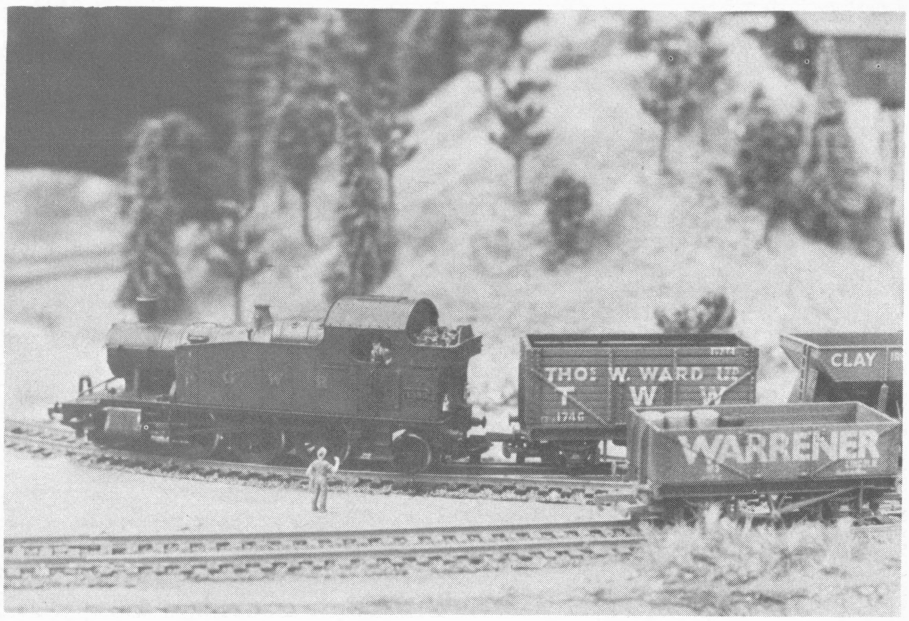
There are obviously many more suppliers and retailers not listed here and our selection (apologies for omissions) is merely intended to act as a useful guide for those who are complete beginners and want to make a start. Virtually all model railway retailers in Britain cater for 00 gauge in any case, so visit your nearest hobby shop first.

Introducing the Willow Valley Railway

The idea behind our compact H0/00 project for beginners or modellers who are short of space or time

We've talked in the past (May 1980, January 1981, November 1981) about the modelling potential of American short lines and British light railways. How about turning such ideas into a practical model railway layout? Well, if you have plenty of experience of the model railway hobby you'll no doubt have ideas of your own, and if you have the space you should have no problems in realising such a layout. However, for our latest little project we thought we would come in on the side of modellers who are either absolute beginners or really short of space, or both! But even if you are an old hand you should find this project of interest for it offers something out of the usual line of approach.

Conventional thinking leads to ideas of modelling branch lines if you are short of space and some fine examples have been made, and will be made, nicely capturing the serene British way of life of days gone by. With a few notable exceptions, however, British branch lines were rarely compact in real life. Owned in most cases by big companies, the stations tended to sprawl and the track layouts were often very elaborate for the relatively light traffic which the branches usually generated. If you modelled a classic branch terminus like Ashburton to anything like scale length in 00 gauge you would actually need about 10ft, if not more, and that is one of the more compact examples.

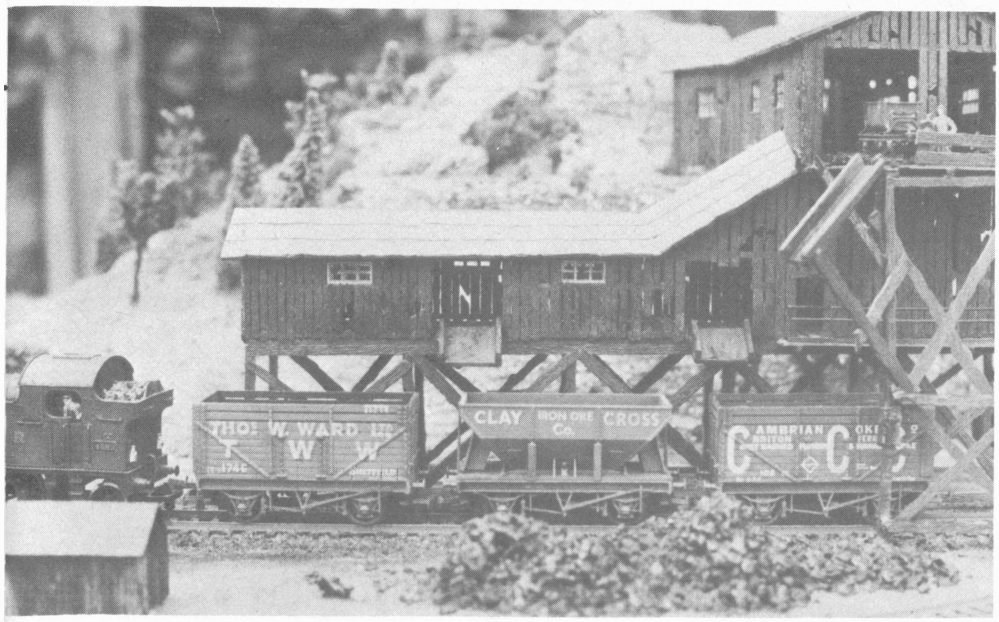


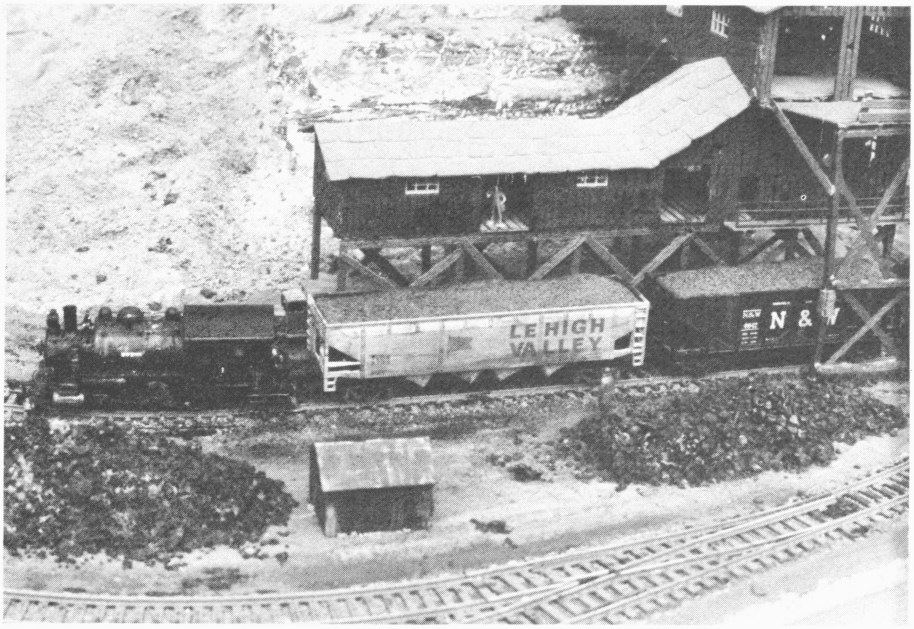
From a low angle even a tiny layout like the Willow Valley Light Railway looks a lot bigger. Today GWR No 4589 is working the line and it is just leaving the coal mine siding to run some wagons down to the junction. The fireman exchanges pleasantries with a miner.

Hence most modellers go for a freelance fictional branch line where all the stations are made more compact to suit the space available. True, it is possible to cite examples of branches where the stations are more compact, for instance the Culm Valley and the Killin branch, but if you delve into the history of such branches you often find they were originally very independent little companies at the time of building, which were not under the influence of the bigger railway companies who later took them over.

If you thought of a conventional British branch line as a layout project, why not carry your reasoning a little further? If it is going to be a fictional line anyway, why not make it wholly independent of the big time? Why not a line where you are not subservient (in small scale terms) to BR, the GWR, the LMS, etc, taking orders from head office and pretending your layout is part of bigger things? The British light railway or the American short line is the way forward in this direction where you can have links with the big time companies without having to pretend you are part of them. One limitation of a conventional branch line (anywhere in the world, not just in Britain) is that the real traffic pattern tends to be frightfully dull or repetitive, or severely infrequent, or a combination of all of these. You'll know the problem – an auto-train or railcar in each direction once every hour (or more probably every two hours) and a freight train once a week even if freight still runs. Model branch lines are a hive of activity by comparison and they would have to be to stop the operator dying of boredom. We strongly suspect that the reason many modellers build a layout, then quite soon afterwards rip it up and build another one in the same space is because the operating potential of many a good looking layout does not match the

We used the well-known Pola coal mine on this layout – modified to fit the site. The Pola model is based on an American original at White Rapids but it is surprisingly similar to some which existed in the Forest of Dean – Northern United, for instance. Both this and the White Rapids original were clad, in corrugated iron, whereas Pola chose wood cladding. With Slater's corrugated iron you could cover the Pola model for variety.



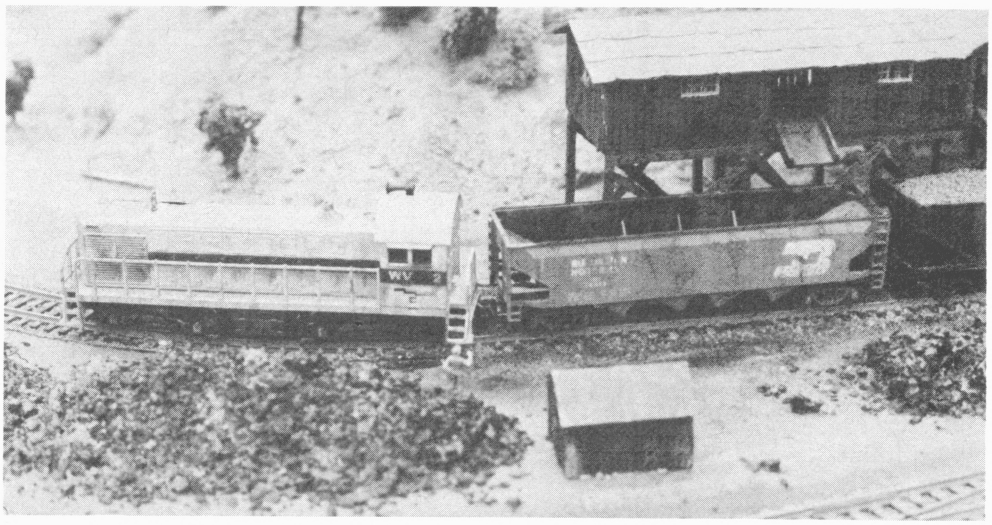


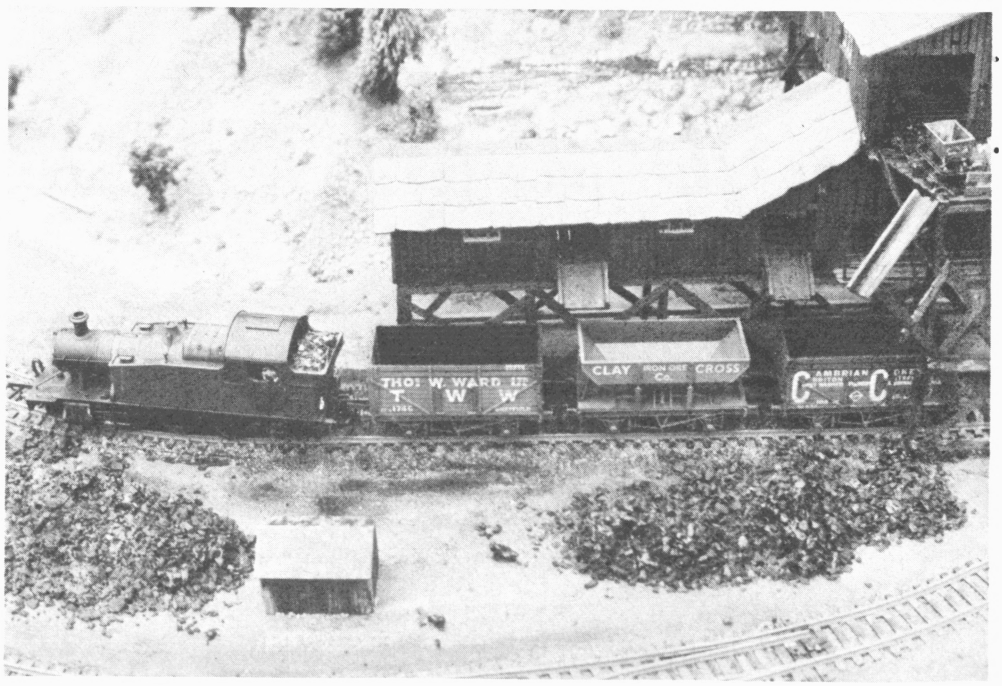
Above: *In its American short line form the WVR is set in the present day, and is one of those short lines still using some steam. Loco No 1 is a 1910 Alco 0-6-0ST, ideal for shuttling loaded coal hoppers, and with fuel plentiful it is economical to use.* **Below:** *Many modellers collect a variety of types. This 'backwoods' light railway allows you to ring the changes to suit your interests. These two views show short line (USA) and light railway (UK) operations as just two options on the same layout. Others might be steam and diesel, GWR and LMS, German and British, etc.*

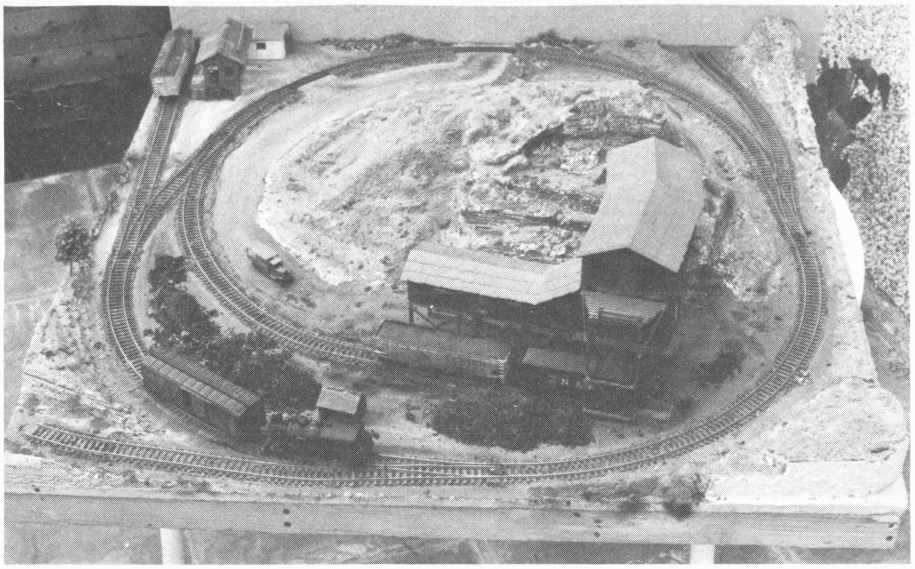
fun and excitement of building it. Could it be that the choice of a conventional branch line as a modelling subject is not necessarily the best idea?

All the dull and infrequent operating patterns of typical branch lines can, it is true, be found on real short lines and light railways, but these were (and are) rarely the most prosperous ones, for the independent light railways and short lines are private enterprises depending on the direct economics of the area they serve for success. They cannot be bailed out by big owners or nationalised masters if they run at a loss and they only rarely enjoy subsidies. Hence if such a railway loses business – as when an on-line customer switches to road transport – then it reflects in the balance sheet, and the short lines and light railways which don't make enough money simply go out of business. This is not a problem in model terms, for you can control the supposed economics of the area your line serves and enough custom can be created to make operations very plausible, and to justify all the train movements so long as you don't over-do things. As an aside to this it can also be observed that quite a few industries on layouts would be absurdly uneconomic if scaled up to full-size working – they would undoubtedly close down, be merged, or use road transport for their needs, as has so often happened in real life. Fortunately for small scale citizens we modellers can control their destinies and economic future in a benevolent way and make sure they all stay prosperous and in work.

When it comes to the building of a light railway or short line layout there are just as many ways of approaching the project as there are for any other sort of layout. With a huge loft or basement at your disposal you could make a really big cross-country line with as many stations as the Derwent Valley Railway itself can (or could) boast. However, if space was no limitation you might be better off taking advantage of the area to build a main line layout of conventional type, so we'll worry about the modeller who is really short of space yet wishes to build a practical layout which has plenty of future potential. In other words it is not a layout you'll want to replace as soon as you've built it. We've planned this, in fact, so that from very small beginnings you can expand it almost indefinitely. In this case we've avoided the conventional 6ft × 4ft approach, partly because it is not necessary and partly because it tends to be unwieldy. No, we've gone even smaller than 6ft × 4ft, right down to around 3ft square as a basic unit. You might think this sounds rather ridiculous for 00/H0, but if you look at the plan you'll see that this basic 3ft section is just one module of a line that grows to suit your time, space, and ambitions. Every section will be small enough to be carried and the drawings give an idea of future development potential which you can tailor to your needs.







Photos by Chris Ellis

Getting back to the starting point, the 3ft square module (it is actually 3ft × 3ft 2in, due to the extra inch at each end in the wood framing) is designed to use up virtually all the track you got in your 'starter' train set if you are a complete beginner – no need to waste anything! – or to be made from any sectional track. There are four turn-outs, two Streamline small radius and two Setrack standard, and a few odd track sections, most of which were purchased cheaply second-hand in our case. It looks simple enough, and it is; just a pear-shaped oval (which looks less toy-like than a regular oval), with two sidings to serve on-line industries. On the outer perimeter are two exit routes which take the line on to adjacent baseboard modules in each direction. If you have been putting off starting a 00/H0 layout due to 'lack of space', then this basic module is designed to overcome this particular excuse! If you are a beginner with a train set wondering how to get going, follow what we do and you'll have a small but respectable layout in next to no time. And finally anyone else can join in, even old hands who want a 'fun' project as an antidote to big serious layouts.

Actually there is nothing particularly new or revolutionary about this layout. It all goes back to first principles but it does reproduce the fundamentals of any railway system, adapted to a light railway or short line setting. It is ideal for the single operator with restricted conditions and budget or as a 'family' layout. For a start we have a basic oval of track, so trains can go round and round in time-honoured tradition. It is fashionable to look askance at such behaviour, but the fact remains that with a continuous line you can run trains for test purposes or just for the hell of it even when you don't feel like serious operations. You can't do this on a simple end-to-end 'corner' layout. The two tracks A and B are the portions of the route leading on and off the module. Even on the module as it stands you can be in business, for these represent the two termini of the line. Hence a train consisting of a loco and two wagons can start at A, go round the loop once (or more) and end up at B. A temporary fiddle yard can be made by extending both A and B with a few pieces of spare track so that longer trains can be worked. Later on the next two modules will be made, joining at A and B, so that there are properly modelled termini or interchange areas where traffic can originate or be dispersed. Each of these further modules will include sources of traffic (such as factories, wharves, or what you will), but on the main module concerning us here we have two sidings, each providing a source of revenue-earning traffic.

Actually you can have any industries you like, but on the layout as built we have a coal mine as big as the space will allow and a building supplier who also deals in 'feed and seed and fertilisers' for the local produce and dairy farmers. The coal mine is a main industry on the line needing a constant change of wagons to haul away the output (but also to bring in stores on occasion, such as pit props and oil for the machinery). Several trains a day could justifiably run to keep the siding clear of congestion. The other siding might manage on no more than a wagon a day or every other day for the traffic it needs to sustain business.

So you can see that even this 3ft square section can keep you well occupied as an operator. Locos have to bring empty wagons from either A or B, exchange them for loaded wagons at the coal mine siding, and take the loaded ones to either A or B depending on what you decide as the further destination for the output. Once the adjacent modules are completed, an interchange with the local main line railway can be made, and incorporated as a siding or loop in the module. Or the next module could be a traditional 'hidden' fiddle yard where such interchange is deemed to take place. Or it could feature a canal wharf where the coal is tipped into barges and shipped away. These are the sort of traffic flow patterns you can decide for yourself as you expand the layout. We make no particular pretence about disguising the loop (or circle) of track for such turning loops have existed in real life. The mine, on our version of the layout, and the big central hill do a good job of breaking up the circle visually and each side of the hill can be treated as a scenic feature in its own right. If you think the layout is still far too simple for you, try exchanging loaded wagons for empties at the mine siding, and introducing an exchange for the 'feed and seed' merchant's siding, and keeping a brake van in the right place, and putting in the odd extra wagon for mine supplies. You'll find that even if you use the circle itself to get the loco from one end of the train to the other you will be kept pretty busy achieving all the shunting movements. You may even get snarled up completely! If you make it a rule never to run the engine round the circle it becomes a much harder task still. All this train movement more than makes up for the shortage of actual scale mileage or the

Looking ahead a little, the views on this page shows the whole 3 ft square module with early scenic work in progress. Compare with track plan to identify the features.

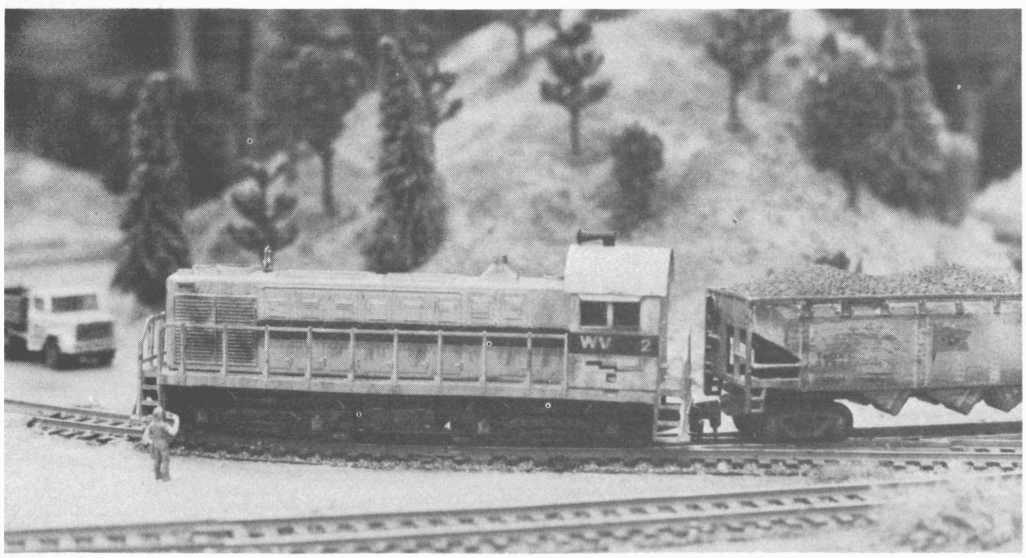
simplicity of the track plan.

There are plenty of other advantages, including all those normally associated with small layouts. It can be built very quickly at minimum outlay. A fortnight of evenings could get the whole basic module complete, less the final detailing, but it could certainly be made in a month or less even without rushing at it. The budget is relatively small for track, materials, and stock. The electrics are simple – just a single power feed suffices, though it could be sectioned if you want more elaborate control than 'one engine in steam'. Because the track plan is simple the electrical integrity is good. We made sure ours was by spending three evenings assiduously testing the circuit with locos and stock and eliminating all bad track joins and getting the track absolutely firm and flat. Poor electrical performance, where human fingers all too often have to assist the loco, and poor track laying where derails are much too frequent, are probably the biggest cause of disillusion and withdrawal from the hobby. With this simple layout your chances of perfection are good in this department and, frankly, it is probably better to have a simple track plan where everything works well than a complex one which looks impressive but is plagued with electrical problems.

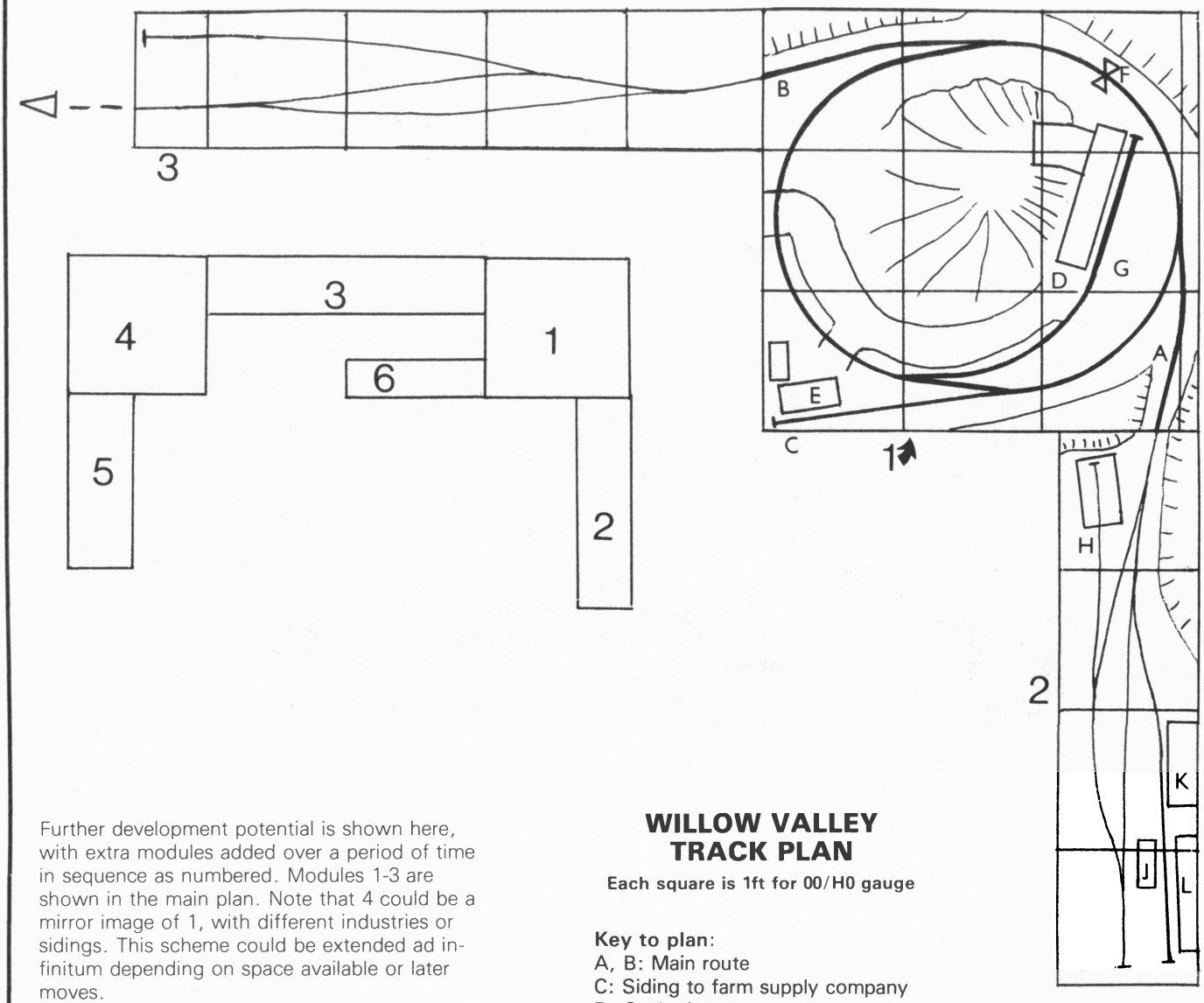
Now your only other task is to invent the fiction behind the line – to come up with a reason for its existence and its survival, and a setting and location. Being a short line or light railway it has no signals or signal boxes as yet, and all turn-outs are hand-thrown (you can obviously introduce electrical control later if you wish), all prototypical so far. It is possible with this line to cross borders fairly easily. For no other reason than we like the name, this layout is called the Willow Valley Light Railway in its British form and the Willow Valley Railway in its American short line form. We've also run old-time German and French trains on it, by the way, but without coming up with any Continental indentity so far. In our setting we fancy the Willow Valley Light Railway to be in the Forest of Dean or on the Welsh borders, with the GWR providing motive power on lease. So the two locos so far in use are a 58XX 0-4-2T and a 'Small Prairie' (Airfix and Lima respectively). But it you prefer real private locos the Hornby 0-4-0ST converted and/or repainted would be ideal, or the Fleischmann 'Black Anna' could be converted to British style. The Willow Valley Railway on the other hand is probably in Virginia, Pennsylvania or New Jersey, maybe even upstate New York, where the scenic surroundings are not too different from the Forest of Dean or the border country. When the pictures were taken the layout was bare of trees and vegetation, but when these are in place the Forest of Dean/Pennsylvania setting will be more apparent. Obviously the WVLR connects with the GWR somewhere off stage and the WVR will do likewise with an appropriate US Class 1 railroad.

The Willow Valley operation is by no means fanciful, for here is a very similar real short line in action. Alco S-2s, 101 and 103 (built 1943 and 1944 respectively) constitute half the total motive power of the Kentucky & Tennessee Railway which runs from Oz to Stearns (10½ miles). Major traffic is coal and the two Alcos have just arrived at the interchange with the mighty Southern Railway at Stearns to set out loaded coal hoppers and collect inbound empties. Terrain and foliage in these parts is not unlike the Willow Valley either! (Mary Jayne Rowe).

On the Willow Valley Railway, WV No 2 is also an Alco S-2 (of 1946 vintage) and here it chugs away from the coal mine siding with loaded hoppers for the main line interchange. Loco is a partially repainted Mehanotehnika model marked for the WVR by using yellow Letraset



The only real problem about a transatlantic (or Continental) change-over is the matter of track fencing. To meet the requirements of the Light Railway Act the WVLR should really be fenced off. However, on a small layout like this fencing emphasises the tiny size of the circle. So we fancy the WVLR must have been built under the Tramways Act (shades of Wantage or Wisbech & Upwell) where we can escape from the fencing requirement. If this matter bugs your conscience or if you are modelling a British setting only, then by all means fence off the track on your version of the layout. In fact the only thing your version of the layout need have in common with ours is the track plan, for you can choose an entirely diffent scenic treatment and name. For a northern setting the Mainline J72 is an obvious engine to have, for instance. The later modules can also be greatly varied to suit. Your industries can be different. For example a cement, lime, or gravel mine could replace the coal mine and Faller make an excellent structure for this. The hill is useful as a visual break, but you could have a river bridge where our level crossing is, finish the middle as a canal basin, and have a canal wharf. Or a container terminal such as the versions made by Lima or Faller could go in place of the coal mine. The possibilities are endless in this direction. If you are with us so far, now move on and see how the layout is actually built – it could be a project for you this winter.



Further development potential is shown here, with extra modules added over a period of time in sequence as numbered. Modules 1-3 are shown in the main plan. Note that 4 could be a mirror image of 1, with different industries or sidings. This scheme could be extended ad infinitum depending on space available or later moves.

Note that tracks shown on module 2 and 3 are provisional to give an idea of possible future developments.

Siding C on main track plan could be extended on to module 6 if desired.

WILLOW VALLEY TRACK PLAN

Each square is 1ft for 00/H0 gauge

Key to plan:
A, B: Main route
C: Siding to farm supply company
D: Coal mine
E: Farm supply company
F: Power feed, and site for halt if desired
G: Spoil heaps
H: Loco shed
K,L: Factory, brewery, etc
J: Station

Track requirements – module 1

Here we deal only with the first module – the 3ft square section which incorporates the large coal mine. You can use virtually any sectional track to make up this layout, for though geometry does vary a little with make, and section lengths vary, by trial and error you will come up with a plan similar to that drawn. Don't worry if it is not exactly the same. Almost certainly you will be able to use some, if not all, of the track from a 'starter' train set, if that is what you have, but don't worry if you can't incorporate all you have, for any left-over pieces can be used on subsequent modules. Odd short curve sections will be useful for connecting up parts of the irregularly shaped oval. Note that by using a combination of 1st and 2nd radius curves we get away from the usual symetry of an oval. The following list gives the actual track pieces used by us: Peco Setrack turn-out ST-240(1) and ST-241(1)*. Peco Streamline turn-out SL-91X(2), Roco short curves 4432(4), Peco Setrack standard straight ST-200(6)*, Peco Setrack No 2 curve ST-226(3)*, Peco Setrack No 1 curve ST-220(5)*, Peco Setrack No 1 curve ST-221(2)*, Fleischman R1 curve 6025(2). For ease of description we have given Peco Setrack references here(*), but on the actual layout we used a mix of Peco, Airfix, and Mainline; Airfix and Mainline use the Setrack system and all pieces match though catalogue numbers are different.

If you are buying track specially for the layout, use our list above, but some suggested alternatives are all Fleischmann (including turn-outs) or Hornby or Roco pieces with Peco turn-outs. If you already have an assortment of different makes, or a second-hand source, you should find that they will all connect happily together. For choice go for nickel-silver (Roco or Peco Setrack), but we found that our mixture of nickel-silver, brass, and steel pieces all work well together, having been deliberately mixed to see what could be done.

Working on the Willow Valley layout

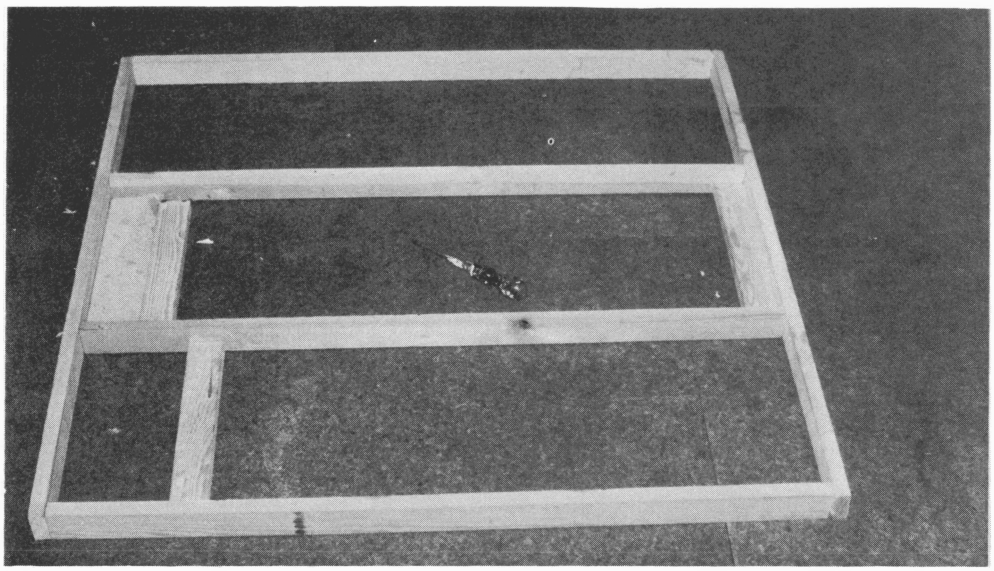
Simple HO/OO layout with big potential

Part 1: Making the baseboard, laying the track

A lot of beginners start off with a fairly simple oval from a train set, then as their ideas develop they scrap the first layout and build something more ambitious, sometimes even getting rid of the original track, loco, and rolling stock in the process. This layout is designed to help a complete beginner make an easy start without necessarily scrapping the early efforts soon afterwards! The section we build here is the centre module of a layout that can be developed much, much further than this, as has been previously explained. The small area limits the scheme to a light railway, *kreisbahn,* or short line (depending on whether you favour British, European, or American models), but as the scenery is fairly neutral you can alternate how you wish if you collect, say, British and German models.

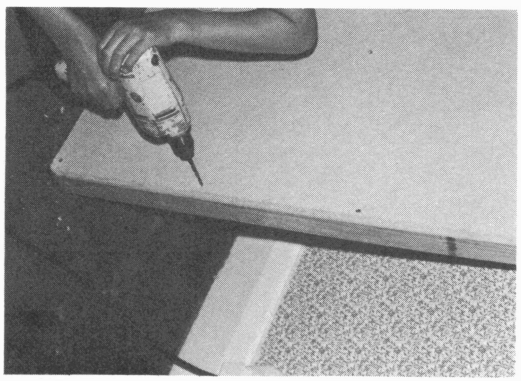
You can follow our stages exactly if you wish but there is some variation possible in the lead of the sidings, and if you want to make it a little bigger, say 3½-4ft square, go ahead and do so. We'll be talking about the scenic work next time and worrying about expanding onwards and fitting supports, etc, as we get to it.

The baseboard framing covers the usual style of construction, as featured before, or in books like our *Baseboard Construction.* For the insulation board top you'll be lucky to get an off-cut this size. Probably you'll have to buy a standard 8ft x 4ft or 4ft square sheet and get the timber merchant to cut it down for you. If you get a larger sheet, keep the remaining strips for they can be used to surface the adjoining modules later on.

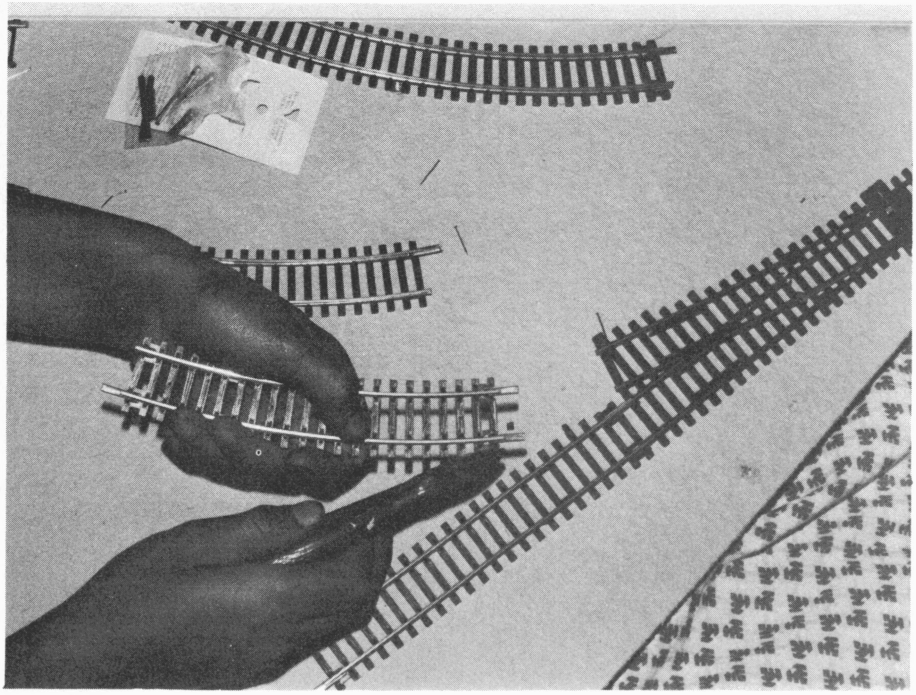


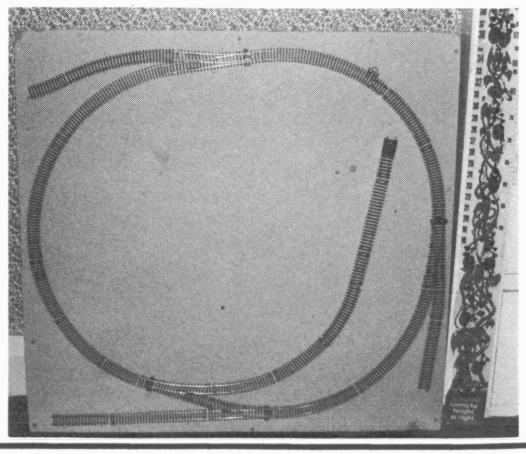
The whole project starts with the framework for the baseboard which is made as a conventional grid from 2 inch x 1 inch battening. You need six pieces cach 3ft long as the main members, screwed and glued together like this with four pieces inside and two side pieces. Because the wood is about 1 inch thick the finished area will be 36in x 38in. Use any off-cuts or oddments as short cross pieces inside the main members. Because there are turn-outs at the centre point of the sides we added extra pieces there, then added the others evenly spaced. More pieces like the short piece lower left were added after this picture was taken.

We show our suggested 'clean' method of ballasting which does not gum up the electrics.

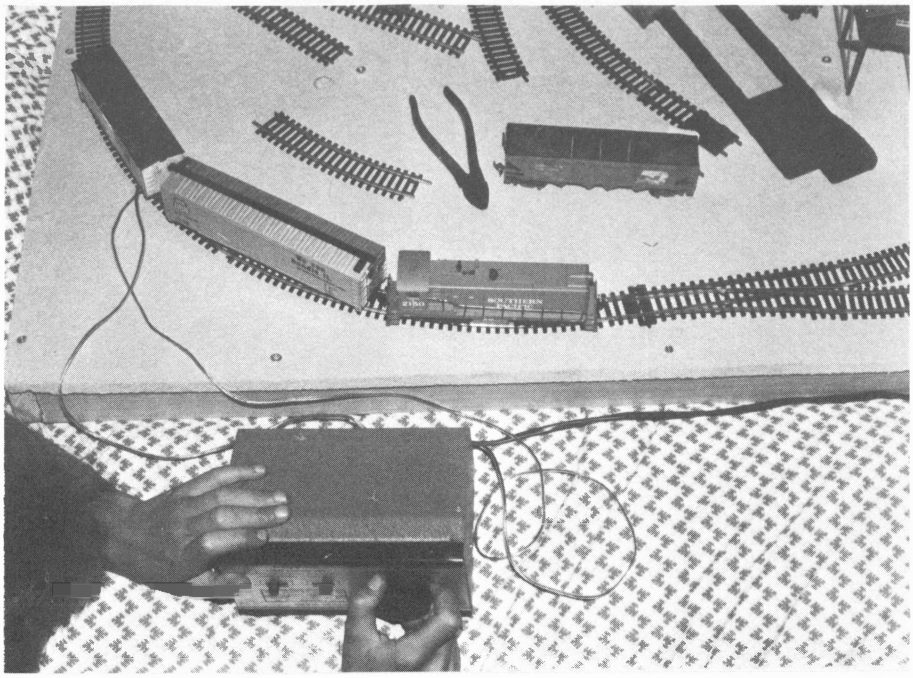


Above: *The top surface is ½ inch insulation board, ordered and cut to size, exactly 36in x 38in, from a timber supplier. Use the drill and screws to attach it to the framing.*





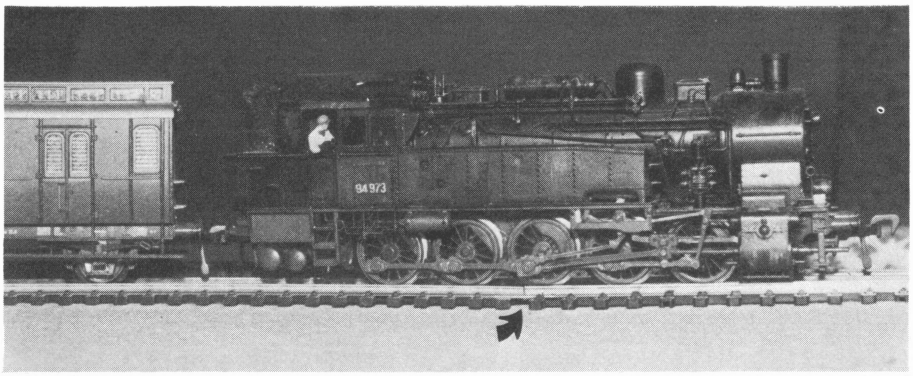
Above: *Follow our Willow Valley track plan to arrange the sectional track on the board. Everything used here is standard. Rail joiners are supplied on sectional track, but you need to buy some for the Peco Streamline turn-outs. Some sleepers may need slight trimming, as is being done here so that the sidings and junctions fit.* **Right**: *When all the track sections are sorted out and joined up, use track pins to hold it all temporarily in place. The board and layout should then look like this. The measure on the wall proves the board is only 36 inches wide!*

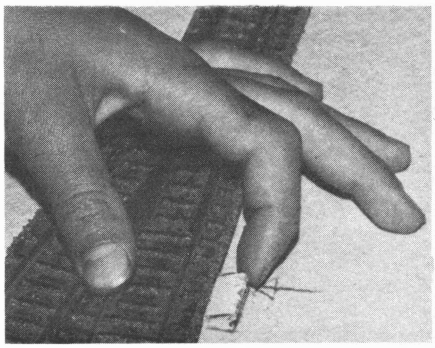


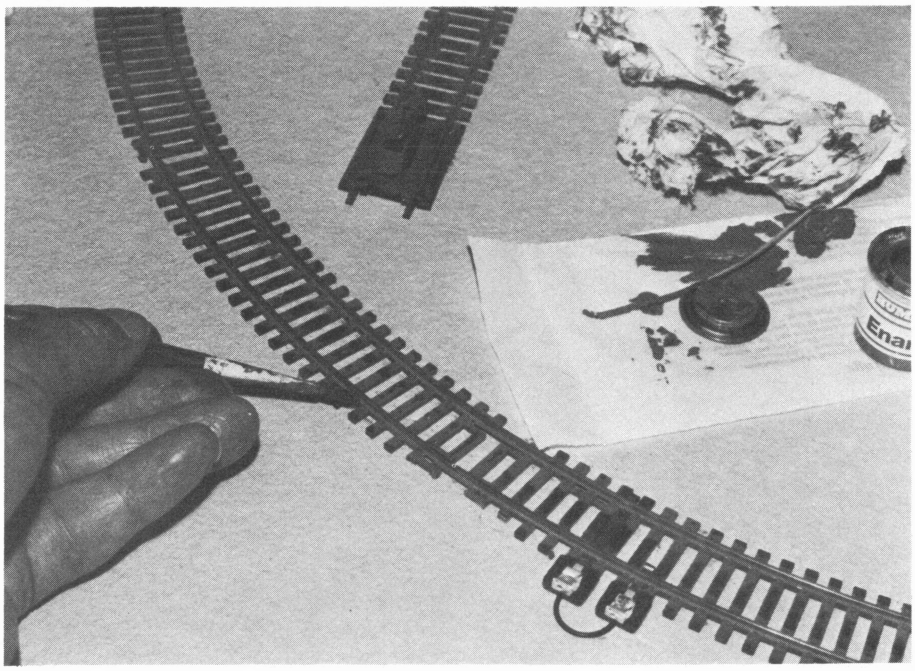
Left: *Now comes a most important part of the work — testing the track for electrical perfection and even laying. Use all the locos and a selection of the stock to try every part of the layout so the train will run flawlessly over the whole layout in all directions, pushing and pulling, with no stalling or derailing anywhere! It is essential to try all locos, not just one of them. If any join or section is suspect inspect the track carefully and if necessary replace it with another piece. If using old track clean it before laying. We spent three evenings doing nothing but this until everything worked perfectly. Rail joiners which are slightly bent or distorted can cause derails so replace any that are less than perfect. Beware of 'lame' rolling stock, of course. A badly running wagon may cause derails which are no fault of the track.*

Below, left: *Here is a good example of a typical fault in track laying. The Fleischmann DB Class 94 is stalled and close examination reveals a very slight V-shaped dip at the join (arrowed) which is sufficient to leave the No 3 pair of wheels just clear of the rail surface. As these are pick-up wheels the loco stalls.*

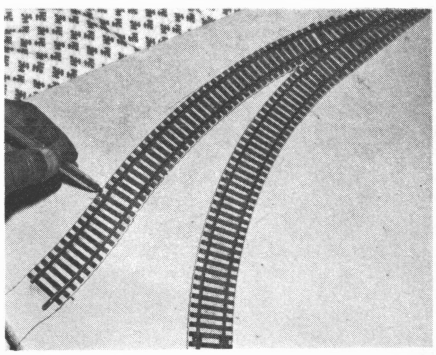
Below: *We cured this problem with a tiny wedge of wood which forced the rails level at the join, here pictured after ballasting was complete.*



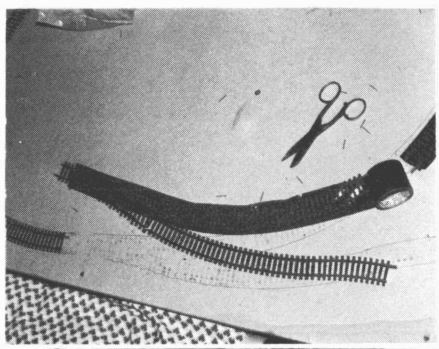


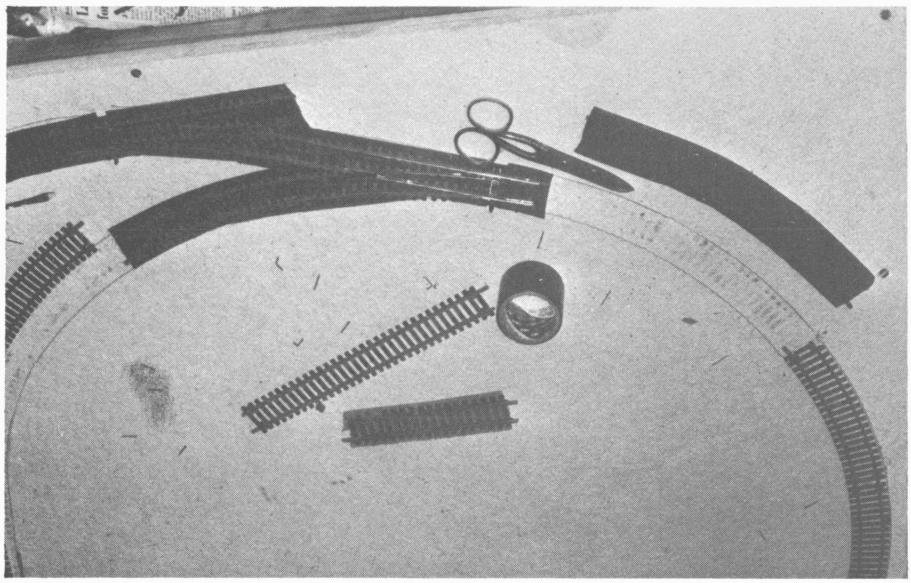


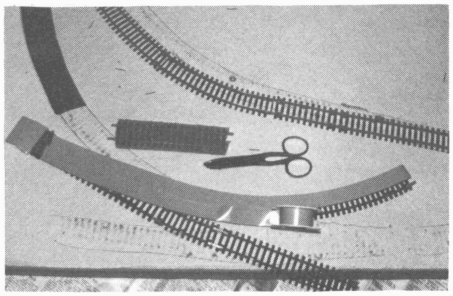
Above: *All the track must now be 'weathered' for realism. This is done by painting all but the running surfaces in 'rail colour' (Humbrol), though matt dark earth is a good substitute which we used. Great care must be taken not to get paint between the rail ends and joiners or on the switching sections of turn-outs for paint is a great insulator and could ruin the electrical integrity. Repeat — take great care with this process! Here we see the Fleischmann power clip and we have not painted the clip or the portion of track to which the contacts are actually affixed. This work takes at least one complete evening and however careful you are you will still find shiny metal showing through in places which can be touched out later. On completion clean all the top surfaces very thoroughly — they must be completely paint free — and test the running of the trains again, remedying any stalling or hesitation.*



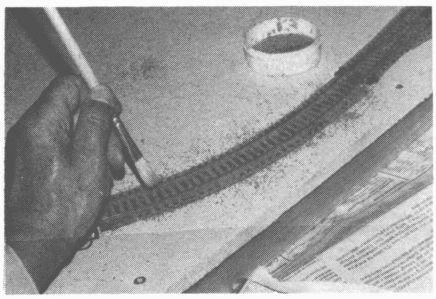
Above: *With 'weathering' complete, draw round all the track with a marker or ball pen so that when lifted for ballasting it will all go back in the correct position.* **Below**: *For ballasting you need 38mm wide brown or grey PVC tape, plus the ballast from the Arnold ballasting set No 1930. Start by lifting out one turn-out and sticking the tape under the sleepers.*



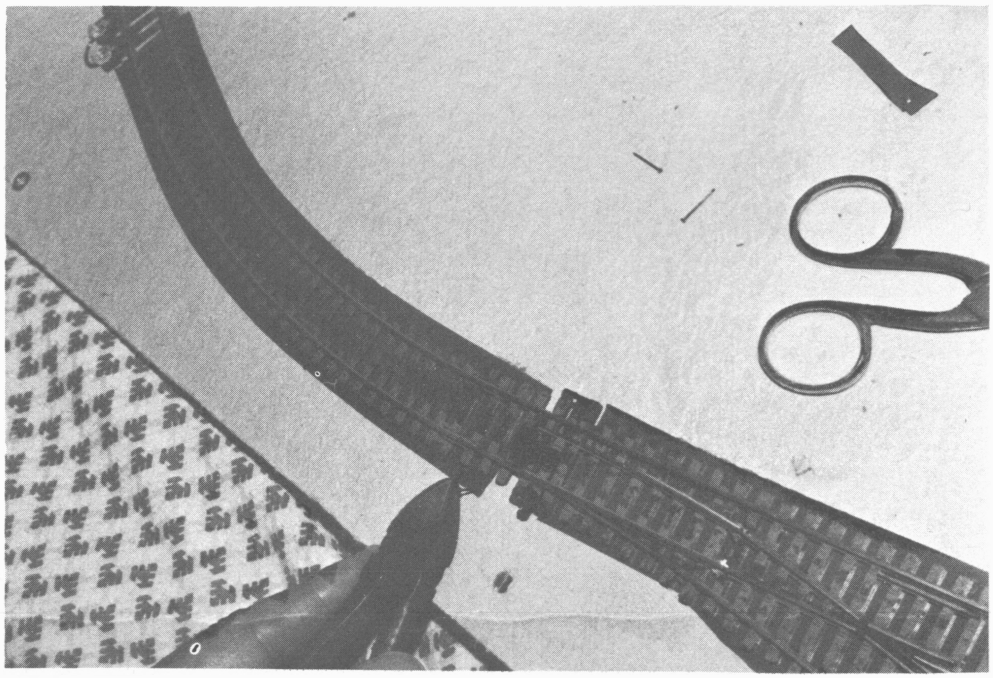




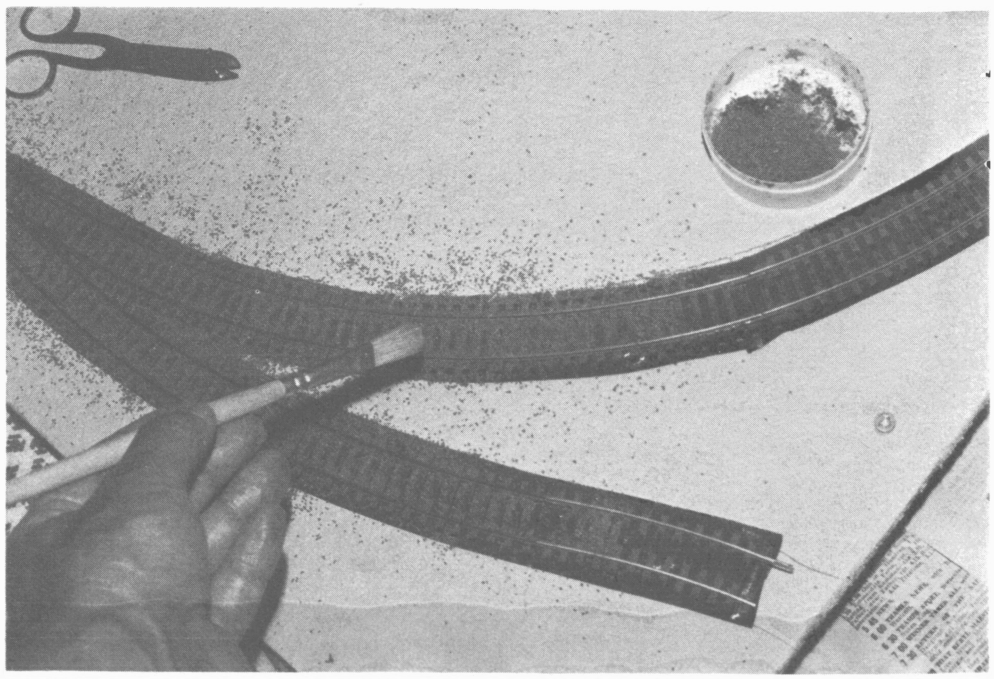
Left: *Here is the same area as previously shown with the turn-outs back in position and PVC tape added to the next section of track. Use one or two track pins to stop the track sliding about, but do not carry out final pinning until all the PVC tape is in position under the sleepers.* **Above:** *Instead of 38mm tape you can use the PVC tape included in the Arnold set. As this is intended for N gauge track, use it double as shown here, applying it to half the width of the sleepers at a time. Note how a gap is left where the moving tie-bar of the turn-out is, another important matter to note.*

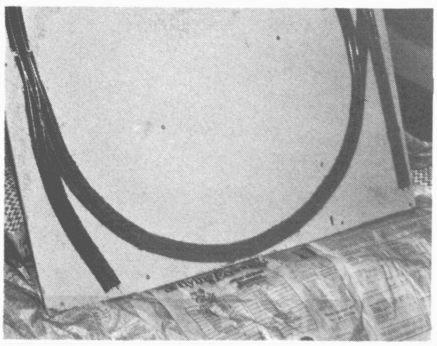


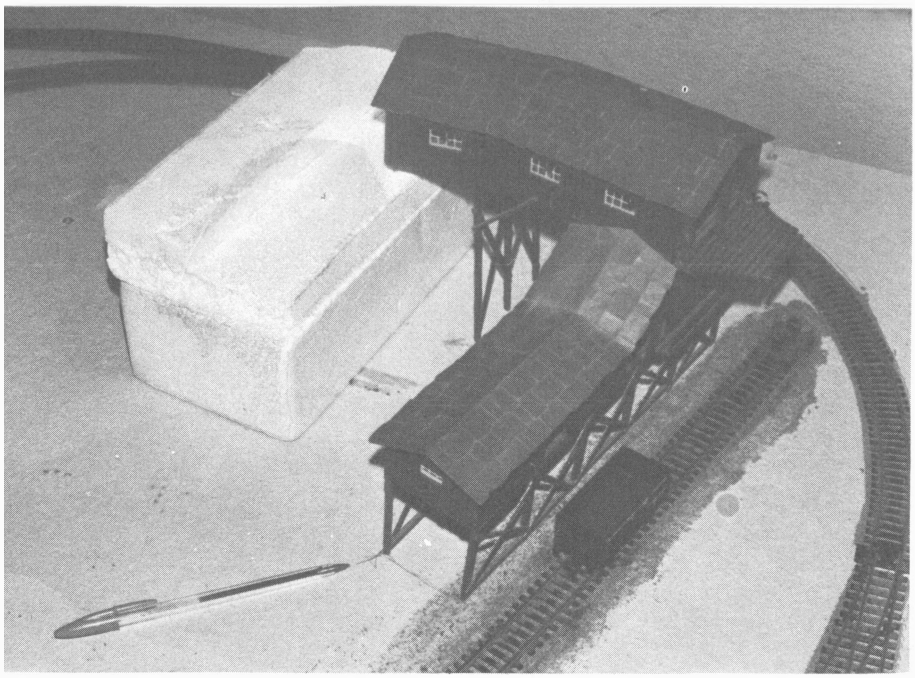
Right: *Close view now shows all the PVC tape in place sticky side up, under the sleepers with a gap left so that the tie-bar of the turn-out can move with no risk of sticking to the tape. If any edges of the tapes show any sign of curling use a track pin to keep it flat, as on the corners by the tie-bar in this view.* **Above:** *Next mix the Arnold ballast in an old tin lid or plastic container. It comes in brown and grey colours and is mixed to give a good 'ballast' colour. Run it over the sticky tape with your fingers, a pinch at a time, then use a stiff paint brush to tamp it down, working it well into corners.*

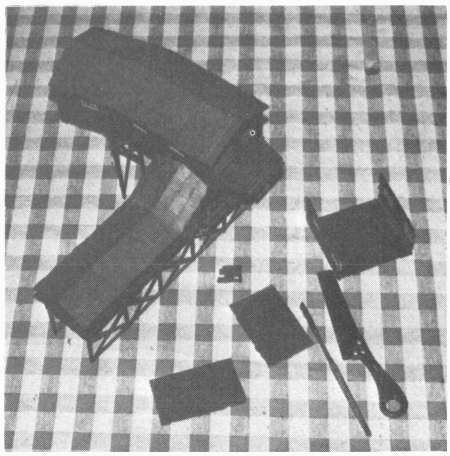


Right: *Here work proceeds on the ballasting. It can be seen that the portions on the extreme right have not had ballast added yet. Do a good thorough job on the tamping. At turn-outs go a little more gently, taking the greatest care not to trap pieces of ballast inside the springs, tie-bars, or other moving portions or contact areas. If the track is firmly pinned down at every pin hole you should have no problem about ballast creeping under the sleepers, and the fact that the PVC tape is attached to the sleepers should prevent this anyway.* **Below:** *When you are satisfied that ballast has been applied over all the PVC tape areas — check carefully — tip the whole board on its side over newspaper so that all the loose ballast falls off. Return this to the bag.*



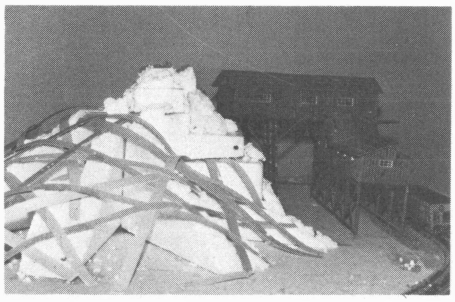


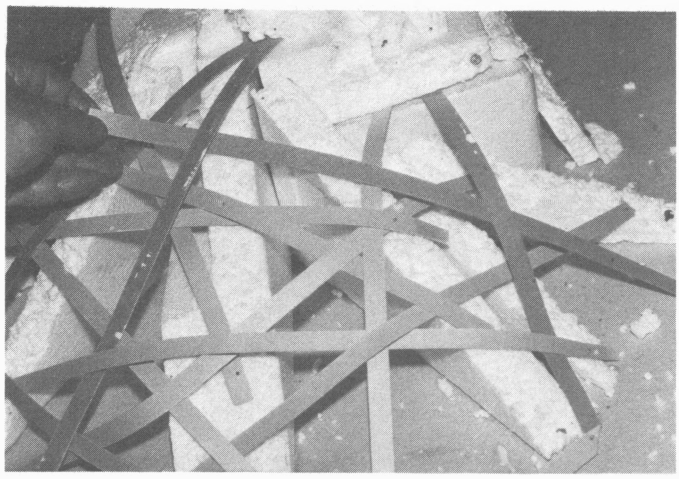




Above: *If you are using the Pola coal mine, like us, you'll need to assemble it at this stage and modify it to fit the site. The projecting end section is sawn off completely, flush with the loading shed. The end of this section is retained, however, and glued to the sawn off end, together with the projecting staging. We also cut out a portion in the loading shed wall to allow a second loading chute to be added later.*

Above: *Here is the coal mine positioned against its siding with the leg positions marked on the baseboard so that it is always put back in the right place. Scrap expanded polystyrene packing has been collected together and is built up to the height needed to match the coal mine.* **Right**: *Now keep going and cut some flat pieces with an old knife to give some contoured formers which will form the core of the central hill. Pile up off-cuts on top of the hill to give an irregular shape. Use white PVA glue and track pins or carpet tacks to hold all the plastic foam together.*

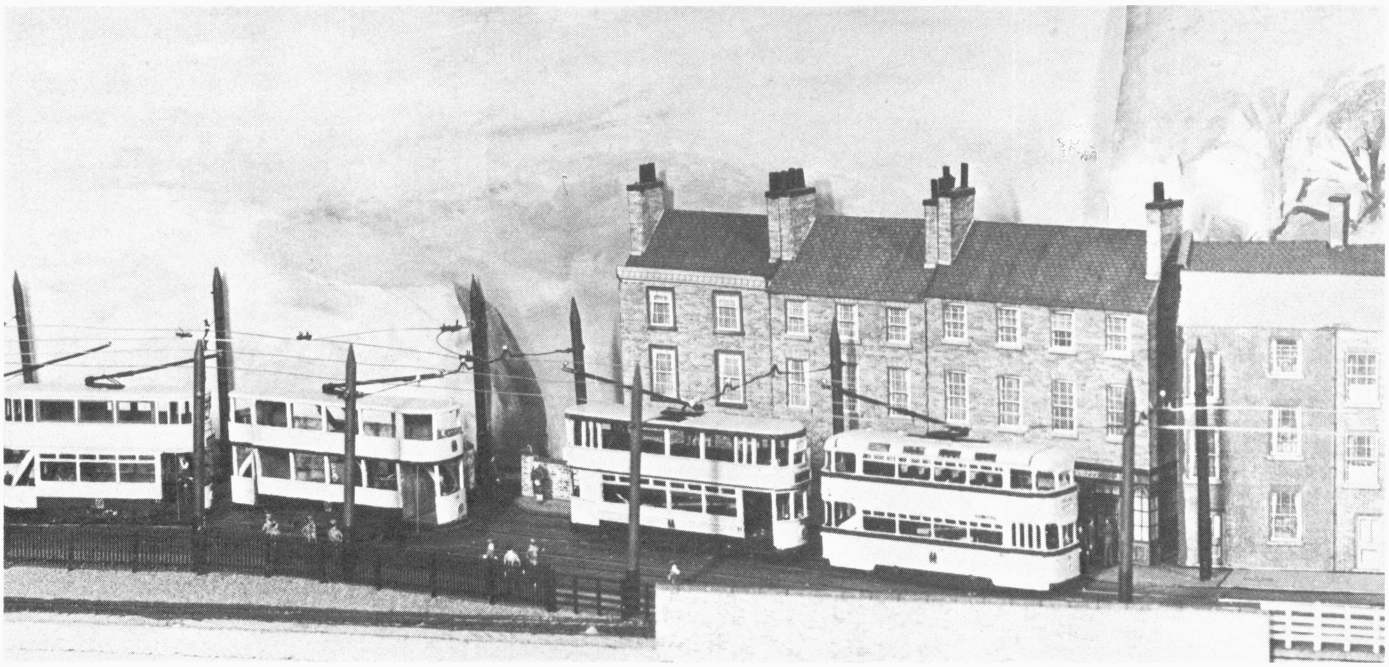




ɔove, right: *Here is a close view of the expanded polystyrene core of the central hill showing carpet tacks being used to hold everything together ıd reinforce the PVA glue. Use plenty of newspaper below the baseboard because scrap plastic foam will carry everywhere if you are not careful. Clear ı thoroughly after this session!* **Above, left**: *Now cut ½ inch strips from old cereal or detergent packets and interlace them to form a cage over the ex-ınded polystyrene formers. Use pins or adhesive tape to hold everything loosely together.* **Upper left**: *By the time you have finished everything should ɔk like this, and we are ready to start adding the scenic surface.*

(Continues next issue!)

NEWTOR CITY TRAMWAYS



This photograph shows Park Gates with car numbers 32, 16, 33 and 511 congregating outside a group of houses. Remember that trolleys not in scale can be quite acceptable providing that there is complete uniformity between them.

Part 4

Eric Slagg continues with working Trolleys

The successful collection of current from the overhead, depends on a flawless installation and a trolley design which is 100% efficient in operation.

My trolleys have 'evolved' gradually from the original design 25 years ago and stemmed from my inability to find the tiny springs needed to model a scale base in 4mm scale. All my double deck cars are now fitted with an identical trolley of standard dimensions. Very unscale, but they work perfectly and can be seen in a number of photographs which have already appeared. The only exceptions are on open top or single deck cars where the latter have a standard base but much longer pole, but the open tops need a different approach altogether.

In the following descriptions I make several references to holes to be drilled of a specific size and to be accurately located. In all these cases start the hole with a very tiny drill and open out to the required size afterwards. Instead of a scriber for accurately marking out the position of the hole I use an old fashioned steel gramophone needle in a pin vice. With a magnifying glass it is then easy to pop the mark for the centre with absolute accuracy.

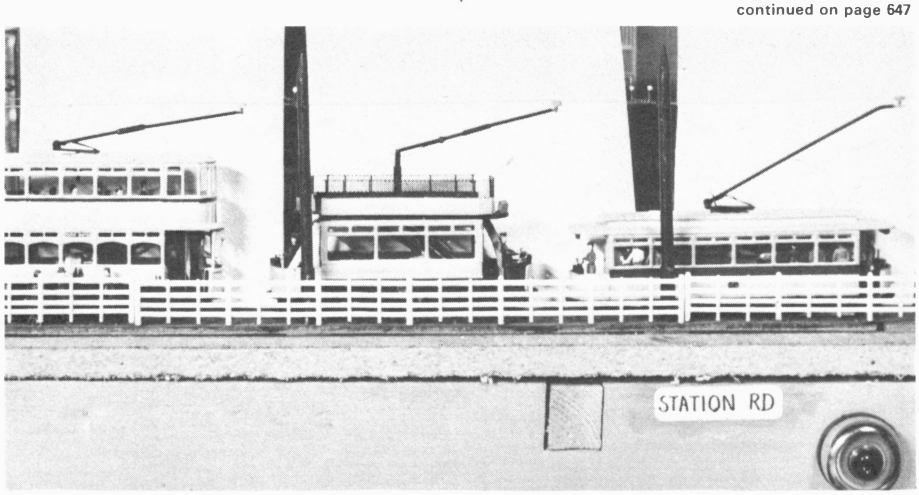
The standard trolley base is a piece of 1/16in brass 20mm × 5mm with a small hole drilled dead centre and opened out to No 50 and then countersunk. This is for a 10BA countersunk screw which will go through the centre of the car roof and be held in place with a nut. The remaining parts are a 'hinge' to allow up and down movement of the trolley, a spring, the pole, and a skid soldered to a ⅛in 12BA countersunk screw which goes into the end of the pole.

The hinge is a 5mm piece of ⅛in brass rod drilled through No 70 to take a small bit of nickel silver wire. If you have no lathe, a piece of small brass tube might suffice, provided the bore is not too big and the wall is not too thin (because of the next operation). Across the centre, file a small flat so that a small hole can be drilled through to the centre – this is to take the bottom of the pole.

The pole is made from 1/16in brass rod in two pieces. The bottom part is 25mm long and the end 1mm is turned down to form a spigot that is to go into the hole just drilled in the 'hinge'. This is then solidly soldered together making sure that the pole part is at 90° – no more and no less! The hinge and pole piece is then soldered across the end of the baseplate by soldering both ends but not the middle. Put the drill through the hinge again to clear any solder or the end of the spigot. With the finest fretsaw blade you can find, cut through the hinge immediately on either side of the pole, down to the baseplate. The pole and its piece of hinge will now lift clear. Clean up the saw cuts with needle files and put the drill through all three pieces again. Re-assemble and put a small piece of nickel silver wire through temporarily. For optimum working the pole piece should now be perfectly free to move up and down. If there is the slightest binding, take apart and file off the bottom of the hinge bit attached to the pole to allow more clearance. A refinement which is worth doing is to turn down the centre 1/16in of the hinge before fixing the pole, as this will lift this piece clear of the baseplate when soldering and allow more clearance when assembled. It is worth being patient and taking a lot of trouble with this, as the entire working life of the trolley depends on completely free up and down movement without any slop.

The stub pole now has a 10mm length of 1/16in internal diameter tube soldered on after pushing the pole about 3mm into the tube. Now take a 55mm length of 1/16in brass for the outer end of the pole and place it in the vice, at the angle it will be when against the overhead, with only the top showing above the jaws. File this flat but do

continued on page 647



The various types of trolleys are shown here with the standard double deck on the left, followed by an open top and then a single decker.

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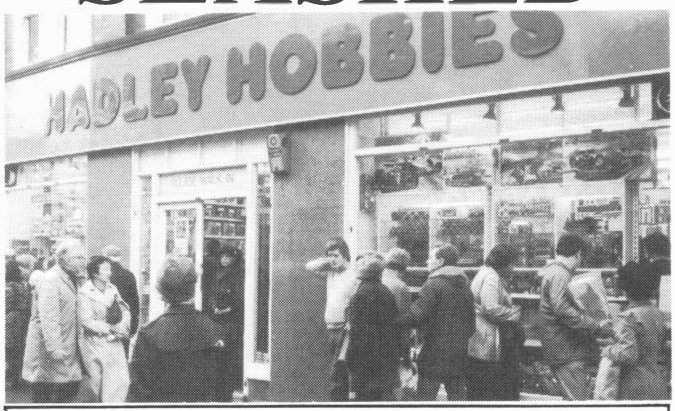

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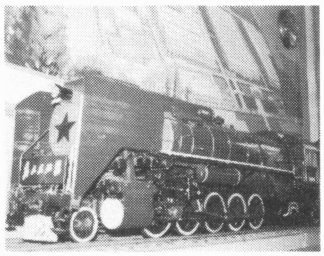
When interviewed on his return from the 1981 Hadley Hobbies China Steam Railway Tour Managing Director Graham Colover reported that more than 10,000 loco's are still in steam there. Quoted as saying that "BR can learn a thing or two from the Chinese", Mr Colover was impressed by the impeccable condition of the permanent way and the cleanliness of loco's and passenger stock. Highlight of the tour was the inspection of the Datong Steam locomotive works and a footplate ride on a 2-10-2. A small display of photographs, technical manuals and builders plates etc is now on show at Hadley Hobbies. An Hour long Audio Visual slide show is available free to clubs in the Home Counties on request — just music no speech!



Dartong 2-10-2 works model

N gauge Deutsch Mark Worries

Stephen Lynch, HADLEY HOBBIES N gauge Sales Consultant reports that the revaluation of the Deutsch-Mark must result in enormous increases in the cost of top quality Imported N gauge equipment. Changes in Distribution arrangements have also to increase prices — however Mr Lynch says that cost conscious customers can make enormous savings by purchasing their requirements now from HADLEYS very comprehensive stock of Minitrix, Arnold Fleischman Ibertren, Roco and Rivarrosi all of which were secured at substantially more favourable old exchange rates.

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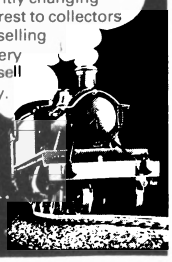

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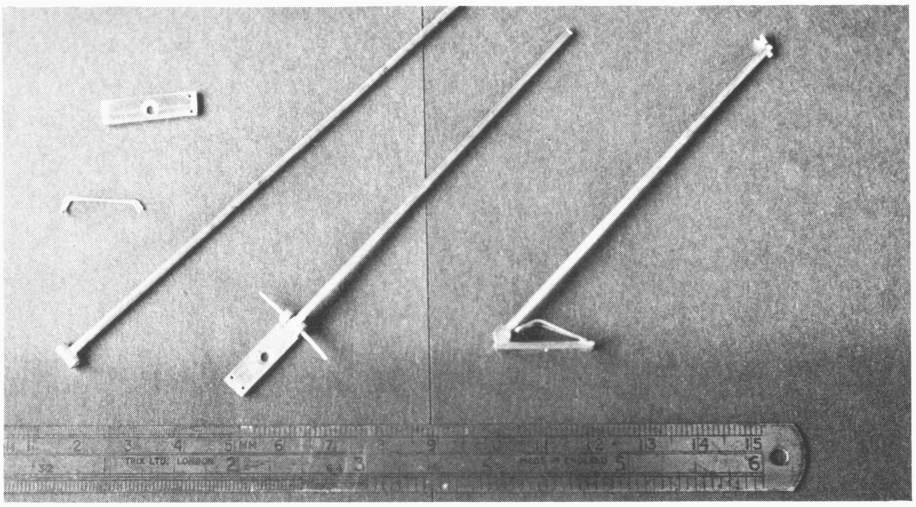
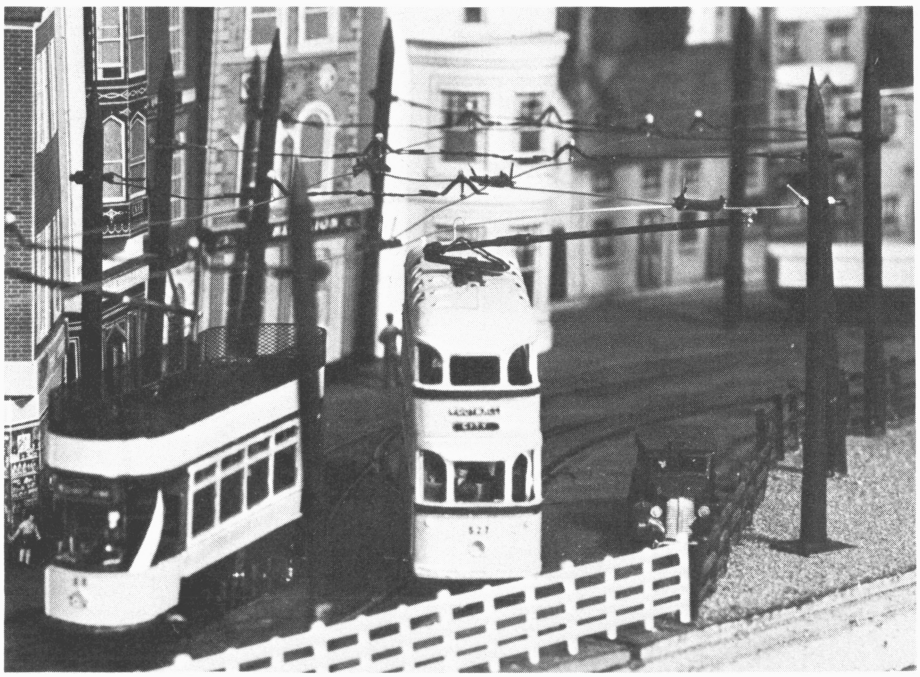
not go below the halfway mark (so that you are not reducing the width below 1/16in) and then using the magnifying glass, pop a centre mark and drill with the smallest drill you have. This has to be opened out to No 62 and tapped 12BA to take the screw to which the skid is attached and there is not much clearance so it is essential that the hole is drilled dead centre.

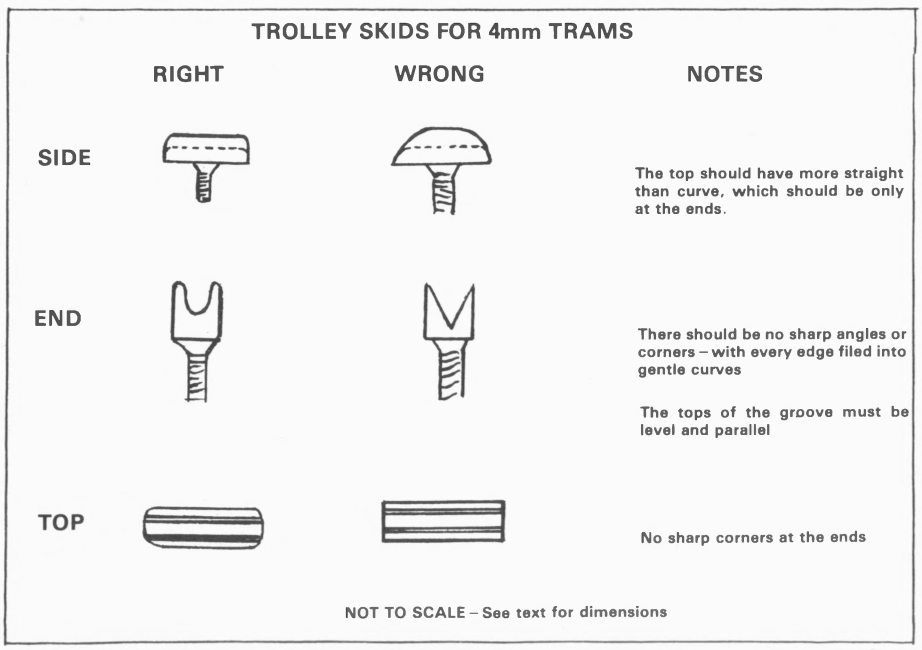
Final assembly is after the car is on the track and the small piece of tube on the trolley becomes apparent. It allows the outer piece of pole to be swivelled to ensure the skid is quite parallel with the overhead and also allows adjustment to ensure that the length from the hinge to the skid is standardised. This measurement for me is 74mm. In just one or two instances to begin with, I managed (quite by luck) to file the top of a completed pole so that the skid was truly upright before adopting the piece of tube as a standard, but the record of de-wirements in the early stages showed some faulty ones. In these cases I cut the poles and inserted the tube piece to provide the adjustment needed.



Here are the pieces for making the trolley poles. Top Left; base plate. Below; spring. Left; pole soldered on to solid 'hinge'. Centre; hinge soldered to base and then cut into three with a fretsaw to allow the pole to hinge when the pin is inserted. Right; trolley pole assembled.



No 527 short working to City reversing at Red Lion. Note the operation of the trolley reverser.

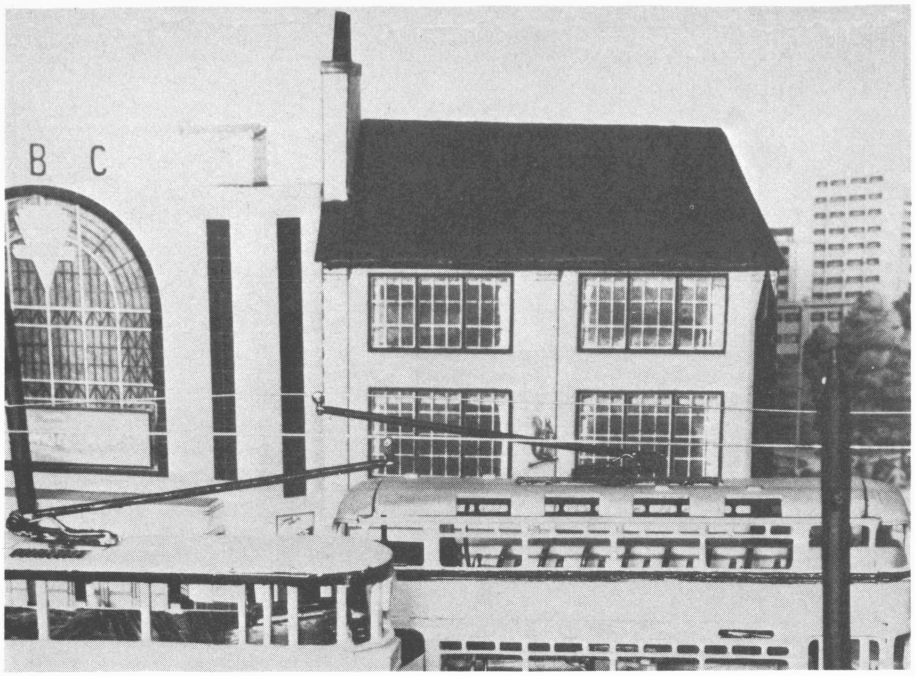

TROLLEY SKIDS FOR 4mm TRAMS
RIGHT
WRONG
NOTES
SIDE
The top should have more straight than curve, which should be only at the ends.
END
There should be no sharp angles or corners – with every edge filed into gentle curves
The tops of the groove must be level and parallel
TOP
No sharp corners at the ends
NOT TO SCALE – See text for dimensions

The spring is a piece of steel wire in the form of an elongated 'U' with the loop bent down and the two ends bent down to go through two tiny holes in the corners of the baseplate at the end away from the hinge. When finally fitted, the spring can be bent with small pliers and I have found that the correct tension is applied when the trolley skid off the wire is 95 to 100mm above the road surface.

I tried trolley wheels at the beginning but soon found that, apart from being terribly fiddly to make (four separate parts), they soon dirtied up through arcing because of the minute contact area. With the introduction of frogs and crossings, their operation soon became suspect so I changed to skids.

Being a sliding and much larger contact they stay clean much longer. Their design has gone through a long process of improvement and alterations and has now arrived at these dimensions which prove entirely satisfactory for long periods of operation without de-wirements. Each consists of 4mm of 2mm square nickel silver. This section appears to be unobtainable so I have had to be wasteful and file this down from ⅛in rod. Take a length of 2 or 3 inches and place it in the vice level with the jaws and with just the top of the curve showing. File this flat and then turn 90° and repeat the process. Do all four sides and then check that you are producing a square section and not a parallelogram. Continue until you are down to 2mm square and finally, take a slight cut off two opposite sides to finish with a section which is 2mm × 1.75mm. This is the width of the final skid.

Mark the strip in sections of 5mm (to allow for the saw cuts and allow for final trim to 4mm) and make a cut on each line as a marker. While the strip is still in one piece, solder a 12BA countersunk screw on to the first marked out skid, ensuring it is dead centre. Rub the head of the screw on a piece of emery paper to get a good soldered joint and hold it in a pair of tweezers for the actual soldering. Once again do not be satisfied



Cars passing between West End and City Square. The one in front has a trolley wheel whilst the other has a skid for a current pick up. A glimpse of City Square can be seen on the right.

with second best. The screw must be truly upright with no tilt in any direction and future perfect working depends on the skid being parallel with the overhead. Cut the skid from the strip and place the thread part of the screw in a pin vice for filing up by holding it in the vice. Make quite sure that you have fixed the screw to one of the 1.75mm widths before proceeding. File down any slight excess to make this width correct and cut with a fine fret blade a slot lengthwise in the middle. Start opening this out with a triangular needle file and then continue with round needle files until this 'V' is formed into a nice wide 'U'. Do not overdo this to make the top edges too thin, as a bit here will probably be needed for final finishing. With a smooth flat file round off both ends, horizontally and vertically, into gentle curves. After fitting and testing it will probably be found that some further filing is necessary to get it right. The most likely faults are the depth of the groove being too shallow and the sides of the groove being too much like a 'V' than a 'U'. Check at this stage that the end of the trolley pole is quite free from burrs by running over with a smooth file; that the thread is clear in the hole and that the screw itself has no little blobs of solder obstructing the thread. Use the tap and the die again to make sure.

Except for the final soldering of the outer end of the trolley to the tube, which is done afterwards, it is now ready for fixing to the car roof.

This is the current collector and must be insulated from the wheels. There are four options open for doing this and I have used all four but there is no problem with wood roofs as this gives the insulation you need. With metal bodies, which is most kits, you can:

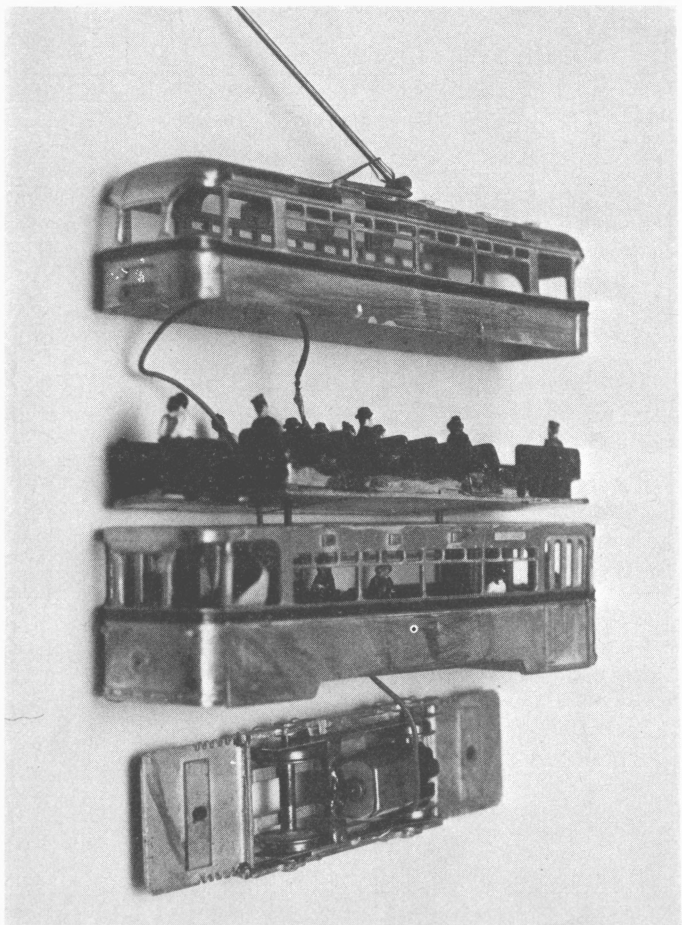
(1) Insulate the truck from the body with one motor lead going to the body and the other to the chassis.

(2) With all metal kits that do not include sides of both decks in one piece, provide an insulating join between upper and lower decks.

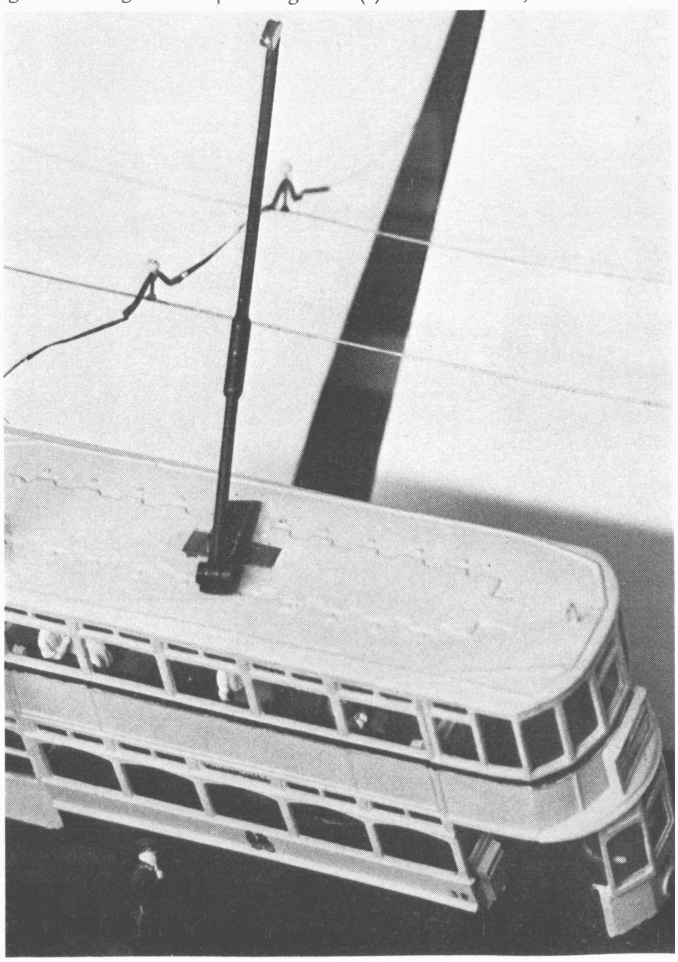
(3) Make a wood roof instead of the metal one provided.

(4) Mount the trolley base on a small block of hard wood let into the roof.

I have done (1) and (2) with a seal of shellac before starting the painting. In the first, the fixing brackets of the chassis are given a liberal coating with an insulated bush for the fixing screw(s). In the second, the same treat-



Metal body insulated by shellac seals. The top unit is screwed into the sides of the seats to provide a path for the current. The top floor is screwed into a wood bearer running the length of the bottom deck.

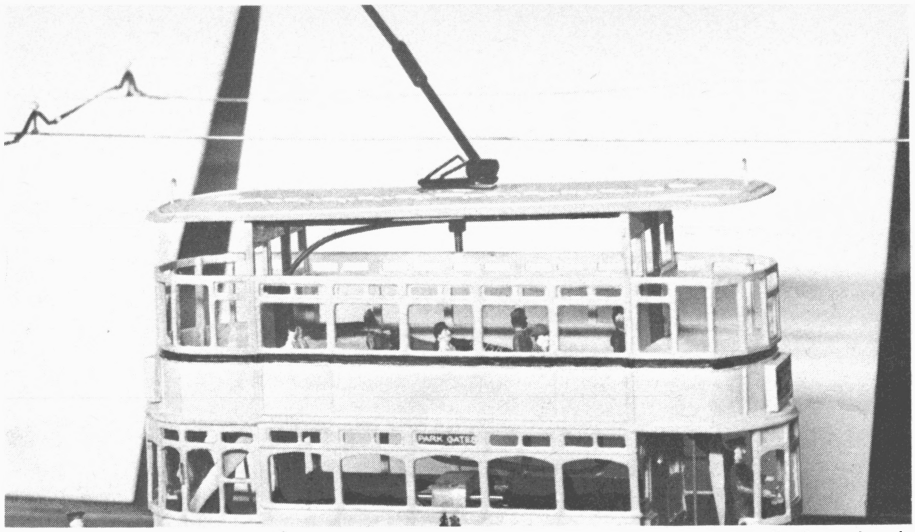


This shows a wooden insert in the metal roof, in order to provide insulation for the trolley.

ment is given to all top surfaces of the bottom deck and all bottom surfaces of the top deck. A hardwood strip – a tight fit – is glued between the two lower deck bulkheads and the upper deck floor screwed into this. Allow at least 24 hours for the shellac and glue to harden thoroughly before fixing the parts together.

My current, and future, standard is method No 4 as this eliminates any problems with insulation. Cut out a rectangle in the centre of the roof 21mm × 6mm, ie, just slightly larger than the trolley baseplate. Rub down a piece of hardwood strip until it is a tight fit into this hole. Rub down until level with the roof and drill a No 50 hole in the centre for the fixing 10BA screw. A 10BA washer can be used as a rubbing plate but I use a piece of 1/32in brass slightly smaller than the baseplate. This is fixed to the wood insert with two small pins used as rivets in countersunk holes. The heads of the pins are rubbed flat and the whole of the top is filed dead smooth with all corners rounded off.

It is now ready for final assembly. Put the countersunk 10BA screw (after checking with a smooth needle file that there are no burrs under the head) through the baseplate, rubbing plate or washer, and then through the car roof. Secure with a nut and tighten fully, then unscrew half a turn. Check that there is complete freedom of movement through 360° without any binding or slop and secure the nut with a blob of shellac. If you use a rubbing plate, the motor lead can be soldered to one of the holding pins, but if



Car No 38 shows the alternative roof fixing. Bulkheads are glued to a false wooden roof which is glued to the roof proper. The whole is a snug fit and pulls out for access to trolley assembly. Notice that the nut holding the trolley fixing screw has the motor lead soldered on to it.

using a washer, solder the lead to the *side* of the nut. This allows for future unsoldering if adjustments are needed.

All my double deck cars are fitted with trolley hooks and these are useful for making the final soldered joint to fix the outer trolley part to the tube. Firstly, using the trolley hook, adjust for the correct length by pushing into the tube until the distance is the 74mm and then viewing the car end on while it is on a flat surface so that you can twist the outer pole so that the skid is exactly upright. Holding it steady in this position solder up the outer end of the tube and you should now be ready for miles of trouble free running – with luck!

Mainly due to my having made skids in ones and twos as the fleet increased mine are not all completely uniform. The filing up is difficult to match up and I must admit that there are one or two spots where frogs and skids are not 100% compatible. As most of my cars work specific routes there are no problems but if, for example, a car uses the Bridge Street junction which it does not do normally, there are occasional de-wirements. In general this is due to a discrepancy in the frog rather than the skid and keeping records of de-wirements, as I did, soon pinpoints any faults.

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Societies, Clubs and Exhibitions

The Colchester & District MRC invite readers to their annual show at the Stanway Scout Hall, Villar Rd, Colchester on November 28. 10.00 – 18.00. Adults 40p, children and senior citizens 20p. 6 working layouts, trade stands, raffle and refreshments.

The Model Railway Club hold meetings every Thursday night in the club's own premises at Keen House, 4 Calshot St, London N1 9AT (10 min walk from Kings Cross Station). Library, buffet/bar and multi-gauge test tracks. Next meeting will be on December 5, 14.00 – 18.00 to discuss various scale societies and their products. Interested? Write to Tim Watson at above address.

The Newcastle and District MRS will hold an exhibition in the Guildhall, Quayside, Newcastle-upon-Tyne on November 13, 14 and 15. 12.00 – 21.00 (Fri), 10.00 – 21.00 (Sat), 10.00 – 19.00 (Sun). Adults 50p, children 25p.

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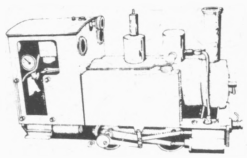

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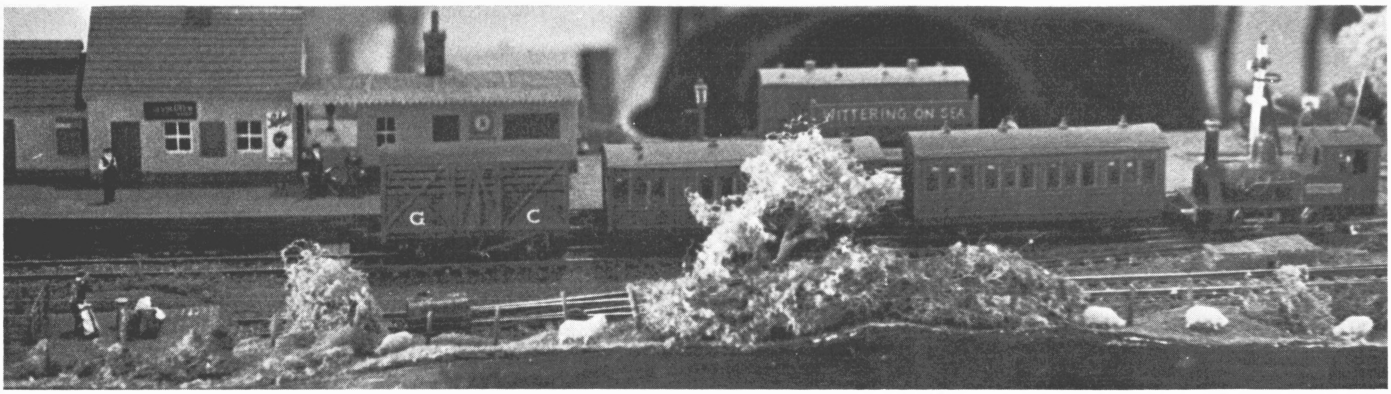


Station scene at Wittering-on-Sea, showing the simple nature of the buildings. The locomotive is 'Victoria' née 'Black Anna'. The GCR fish van was scratch-built from a photograph.

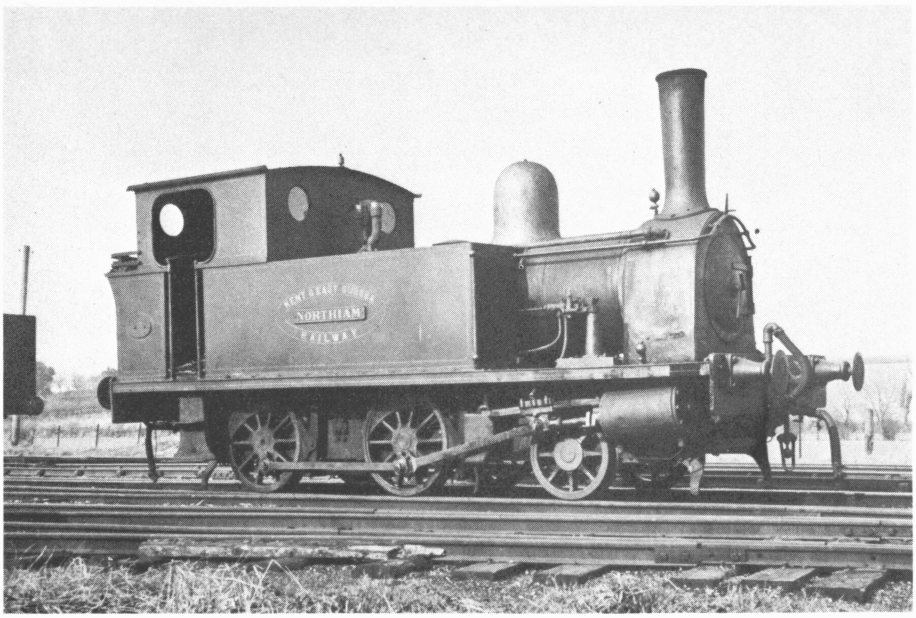
Modelling Rolling Railways

Before attempting to model one of the standard gauge light railways that were once scattered throughout Britain a certain amount of research will be needed. These were lines that were purely local in nature, used mostly by the rural community and almost unknown outside their own area. Few contemporary photographers turned aside from the 'Big Four' to record their comings and goings and it is only recently that growing interest has resulted in the publication of a couple of books that will be indispensable to the modeller. These are *British Independent Light Railways* and *The Colonel Stephens Light Railways*, both published by David and Charles. At the lower end of the price spectrum and no less useful, are the booklets each dealing with one of the lines, which are published by Oakwood Press. The *Model Railway News* ran a series of articles and plans in the 1969-1971 period which will also be useful to the potential modeller.

While several small independent railways were built in the middle and late nineteenth century it was the Light Railways Act of 1896 that formalised the concept of building standard gauge lines suitable only for trains with light axle loadings, thereby saving money. In exchange for low speed limits other common safety factors could be omitted, so that level crossings without gates and even lines without signalling could be found. However it should not be thought that all light railways were operated in an eccentric fashion, as they were not. Some in fact survived long enough to become nationalised as part of British Railways. Few survived much longer and poor revenue together with road haulage competition was enough to finish off these lingering ghosts of a former era.

From the start one feature that all these lines shared was a chronic lack of money. They were usually operated on a shoestring which at times frayed almost to breaking point. One man held a unique position in relation to many of these railways. This was Colonel H.E. Stephens who if he had not built a line in the first place, often bought it out later in its life and ended as the owner. His 'empire' covered most of England and Wales, both standard and narrow gauge, and local operating staffs learned to dread his sudden arrival on an inspection, followed by pages of notes and orders from his headquarters at Tonbridge. He had his human side, too, and once sent an employee ten shillings to purchase a new set of false teeth.

Having studied the various photographs that are available it is possible to list a number of features common to almost all lines, and which should certainly be reproduced even on a freelance line, if the authentic flavour of the original is to be captured:– (*1*) Trackwork – this seems to be wider than standard gauge, an illusion caused by the light rail section. Ideally a model would use code 70 rail, but even if code 100 rail is used it is possible to disguise the overscale nature of the track with weeds growing around the rails and over the ballast, and by painting the sides of the rails with rusty weathering colours. Station layouts should be very simple with no complicated pointwork necessary. (*2*) Station buildings should be very basic – often one building serving all the functions required. Earlier lines boasted timber buildings, while later ones tended to favour corrugated iron construction. However brick and breeze block buildings could also be found. Platform height was often lower than normal, especially if tramway type carriages were in use. (This is a useful feature to retain in model form as a lower platform will tend to look longer than it really is.) Economy in building meant that few lines had long glass-topped canopies over their platforms to protect passengers from the weather, though on several lines the roof of the station building was extended part of the way over the platform. (*3*) Locomotives and rolling stock might be plentiful but most of it would be of an ancient type. Light railways often obtained cast-off stock from the main line companies, and so it is possible to mix various pre- and even post-grouping stock with impunity and still be correct. Some independent lines had a standard livery, while others seemed to use whatever paint was at hand, and this not too often especially in the case of their goods rolling stock. Locomotives were always small to accommodate the axle loading restrictions. Manning Wardle six-coupled saddle tanks were a favourite and cropped up in various guises. Other manufacturers were represented too, but as rebuilds tended to take place in isolated country workshops the well-known builders 'trade marks' of a certain type of dome, or the shape of a cab, could easily be lost



One of the two original locomotives purpose-built for the Kent & East Sussex Railway. This is 'Northiam', named after one of the stations on the line — this was a common practice. Less common is the railway's name painted on the tank-side in an oval shape surrounding the nameplate. Note spiked flat bottom track, American style, common on light railways when bullhead track was used by the big main line companies (Tenterden Rly. Company).

resulting in some very weird one-off designs. Many lines named their locomotives, and numbers if carried at all were switched around the locomotive stud according to whichever engines were in working order. As some engines moved around from line to line it is sometimes difficult to be certain that a particular engine was working a given line on a given date, unless pictorial evidence exists. This makes things considerably easier for the freelance modeller.

On the whole, tank engines were most common, but elderly 2-4-0 or 0-6-0 tender locomotives could also be found. The Kentish lines with their coal traffic and marginally heavier track favoured tender locomotives, which were also to be found on the Bishops Castle Railway.

Carriages were almost always obsolescent four or six wheelers, though the Kent & East Sussex Railway owned a rake of bogie vehicles, and the Hundred of Manhood & Selsey Tramways (West Sussex Railway, as it was later known) had a train of Falcon-built tramway style carriages. These saloon coaches had end verandahs with steps giving access to rail height. Perhaps the most exotic passenger vehicles were to be found on the Weston, Clevedon & Portishead Railway which owned a batch of coaches of American origin, which had seemingly come straight out of the Wild West era of trans-Atlantic railroading.

Having dealt briefly with the prototype's background, let us look at what is available commercially in model form and what is capable of being adapted.

First of all what about ready to run equipment? The most obvious locomotives that spring to mind are the Hornby GWR 0-4-0T and their Caledonian Railway saddle tank. Although neither of these prototypes actually ran on light railways they fill the bill as far as weight and size go, so a reason exists for them to have been bought second-hand to run on a freelance line. A change of livery would be all that would be required, and even this might be dispensed with if the locomotive was presumed to be 'on hire' owing to engine failure. Another proprietry possibility is the Mainline J72 0-6-0T. This is already produced in a private owner livery, and named 'Joem'.

Despite their small size however, these locomotives look rather too modern and main line in nature (with the possible exception of the saddle tank). The answer for other suitable engines is to look in the H0 catalogues. The Electrotren 2-4-0T is a Sharp Stewart prototype with a marked similarity to the original engines that worked on the Isle of Wight. Very little needs to be done to produce a typical example of a small British tank engine.

The body should first be removed from the chassis. This is done by pulling the lower part of the body outwards, releasing the chassis lugs from the holes in each tank side. Now, simple surgery takes place. The buffers are removed as they are set too close together from 4mm scale, and the headlights are also removed. The body shell is made of soft plastic and is easily carved with a sharp modelling knife. If your locomotive is one with a square numberplate set in the chimney you could also try to carve this away as well. Alternatively get rid of the whole chimney and substitute a suitable white metal casting. A varied stock of chimneys, domes, sand and tool boxes and Westinghouse pumps will be a valuable asset and help in remodelling well-known proprietary items. It is surprising how a simple change of fittings will completely alter the character of a locomotive, and a good stock of spare parts will enable various combinations of features to be tried before one set is finally selected. The original Electrotren model has a large square sandbox mounted on the boiler, and as this is quite wrong in feel it too has to be removed. The edges of the resulting hole can be neatened up with a sharp craft knife and Swiss files. After this, a piece of paper is glued across the underside of the hole and left to dry. Quick drying epoxy resin can then be used as a filler to remodel the contour of the boiler.

While the resin is setting, convert the couplings on the chassis to match the rest of your stock. You might also want to fit a new cab front of 10 thou styrene sheet with round spectacle holes. This can be fitted as an overlay, using the existing holes to locate the central drilling point for the new spectacles. However if you do not want to go to this trouble I have recently seen a picture of a British industrial tank engine with similarly shaped spectacles as the model.

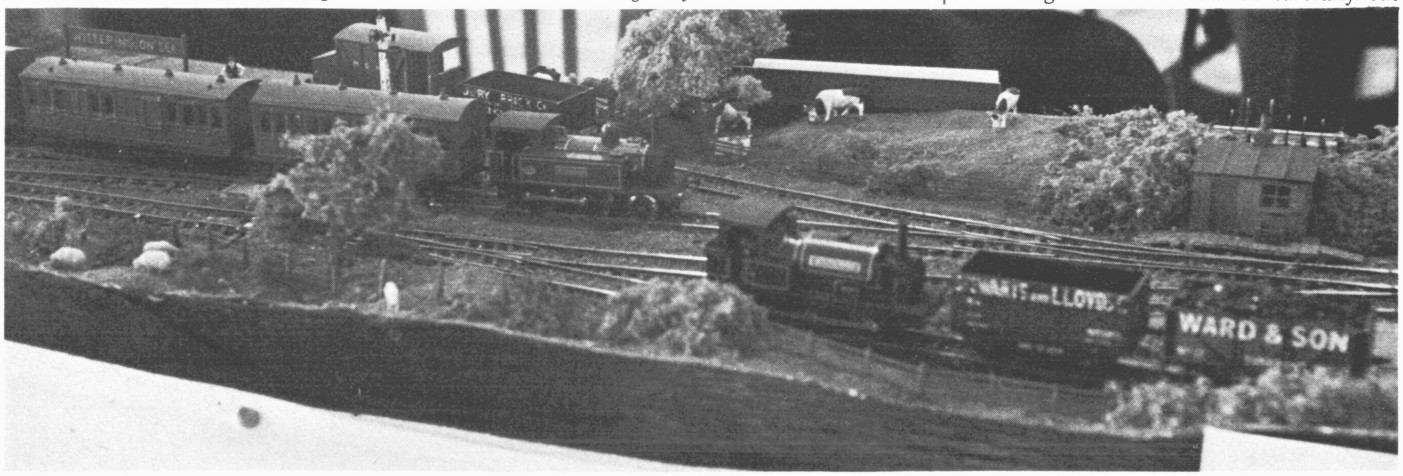
Because of its spur, gearing this model is a little noisy at first, but it is very reliable and will roll along over dirty or uneven trackwork as if it had fly-wheel drive.

Another good runner is the Fleischmann 'Black Anna' 0-4-0 tank locomotive, and it too is very easy to convert. Once again start be removing the body from the chassis. This is done by loosening the screw on the underside of the chassis between the cylinders, then be easing the cab sides apart to free the lugs on either side of the motor block. This job is made slightly hazardous by the brittle nature of the cab steps and care must be taken with this operation. Once the body is off, check whether your model has a new or old pattern chassis. The original type had a removable lead weight that fitted inside the boiler, while the latter type incorporates an integrally cast weight that extends up into the dome of the body. This newer extension will need removing with a fine hacksaw if you want to change the boiler fittings. To do this, the motor should be removed by unclipping the spring clip assembly at the top and lifting out the entire motor. Other work to the chassis includes altering the cylinder profile and cutting away the vacuum cylinder at the rear underneath the cab. As the chassis is a plastic moulding neither of these jobs should present any problems. The gaps left in the cylinder sides can be filled with pieces of styrene sheet, cut to size.

In common with the Electrotren model already described, the buffers are set too close together and should be carefully cut

Locomotives and Stock for Light

by Giles Barnabe



A scene on the author's West Sussex Light Railway. The Electrotren conversion heads a passenger train of butchered clerestories, while the 'Manning Wardle' TT conversion shunts the goods yard.

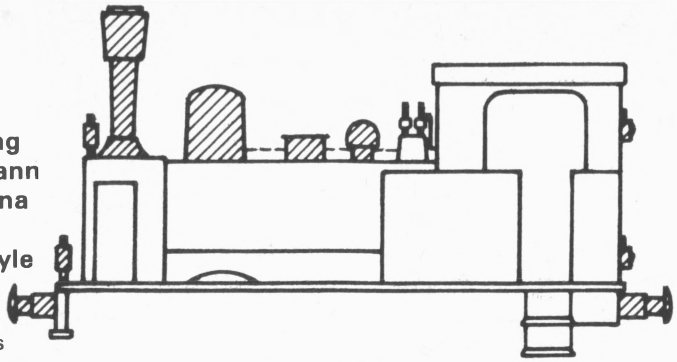
away and put on one side for refitting later. Also remove the front and rear headlights and all the boiler fittings with the possible exception of the safety valves. Steady handed modellers might also attempt to scrape away the doorway detail on the rear cab sheet. File the cab spectacles to a square shape or attach overlays of 10 thou styrene sheet with drilled out circular spectacles as before. Replace the boiler fittings with suitable castings:– possibilities are a tall chimney made up from two tall parallel sided funnels together with a 1400 class dome, or a Terrier chimney and a Kirtley dome – all K's spares. If you are unable to locate a local supplier, K's run a mail order service. Finally fill in the rest of the footplate area round the boiler and fix new buffer beams the full width of the footplate. Refit the original buffers, taking care to align the flattened side of the buffer shanks the same way – it doesn't matter if you have them with the flat side inwards, or underneath, as long as they all match.

The last job of all is a repaint. The basic body colour is of course a matter of personal taste, but a nice touch is to pick out the pipework in copper or brass colours. Below the footplate all the red areas should be repainted as they look very toylike. A mucky, oily brown is the basic treatment here, although the wheels look good painted to match the main body colour. The motion also needs a little weathering to look more natural. The end result can look like a typical industrial locomotive, or with the taller chimney a little like the Wantage Tramway's *Shannon* that took part in the Rocket 150 celebrations.

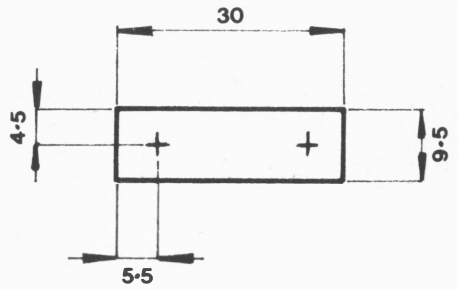
Being unable to resist a special offer advertisement I obtained a Lima Fowler 0-6-0 tender locomotive – the HO version. These are still occasionally advertised or they can be found in second-hand dealers, and they can be modified to represent a typical late Victorian goods locomotive without too much difficulty. As purchased, the model is tender-powered, collecting current from one side of the locomotive and the opposite side of the tender. This means that when separating the engine from the tender, care must be taken to reassemble the tender drawbar correctly. In my case I lost the connecting bar which actually carries the current, and had to make another out of two layers of 30 thou styrene sheet. This also meant providing a jump lead between the tender body fixing screw and the contact wipers on the backs of the driving wheels. The motor is vertically mounted and fills almost the whole of the tender, driving the two outer pairs of wheels. The centre wheels are mounted separately on a sub-assembly with plastic stub axles. The body of the tender is held in place by the fixing screw through the front of the footplate, and by two lugs projecting through the rear of the footplate. These are rather delicate, and care should be taken when separating the parts as the lugs are essential to hold the body and underframe together. The motor assembly sits rather loosely in the underframe and depends on the downward pressure from the body to hold everything in place.

For this reason I was wary of modifying the tender profile, which does rather shout 'LMS', although a coat of green paint seem-

Converting Fleischmann Black Anna 0-4-0T to British style

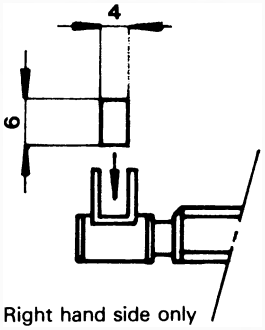


Remove shaded areas – keep buffers

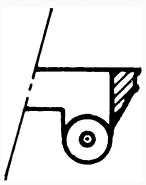


Insert for front cab spectacles

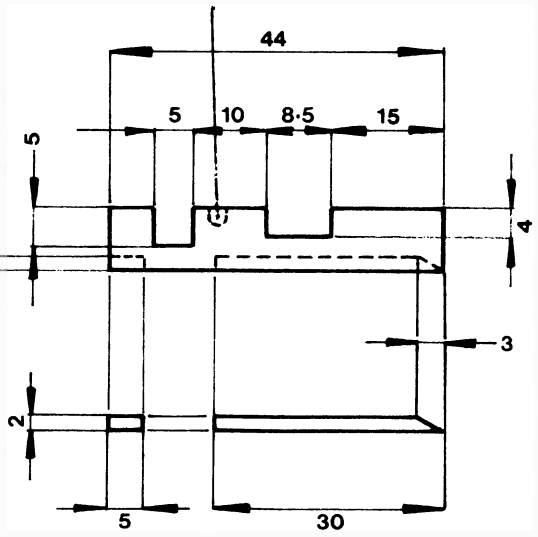
Side view of cylinders after modification, showing dimensions of fillet needed (right)



Right hand side only

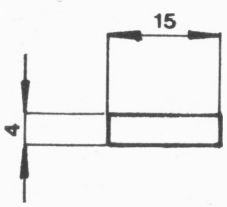


Front view of cylinders – remove shaded area each side



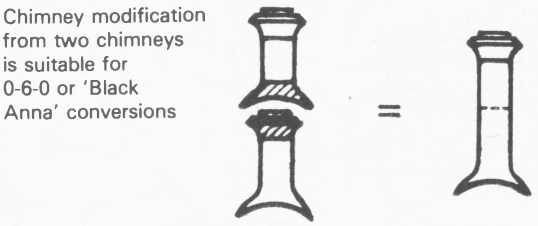
Footplate overlay: 10 thou styrene – one each side of loco; notch for Westinghouse pump on one side only

Footplate valance infill: 20 thou styrene each side

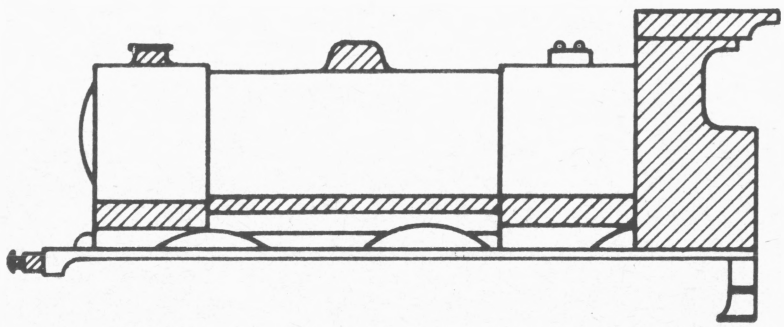


Footplate overlay: 10 thou styrene in front of smoke box

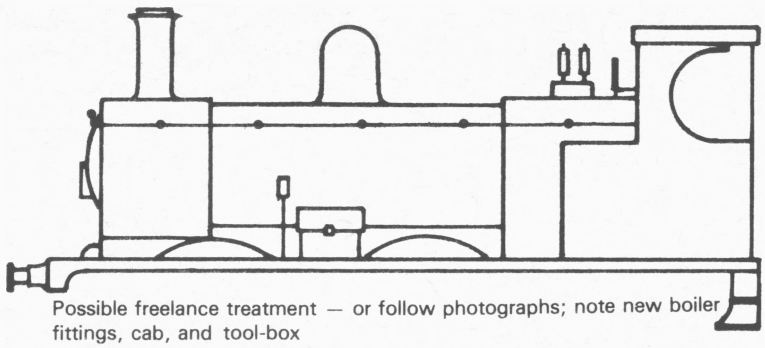
Drawings full-size for model



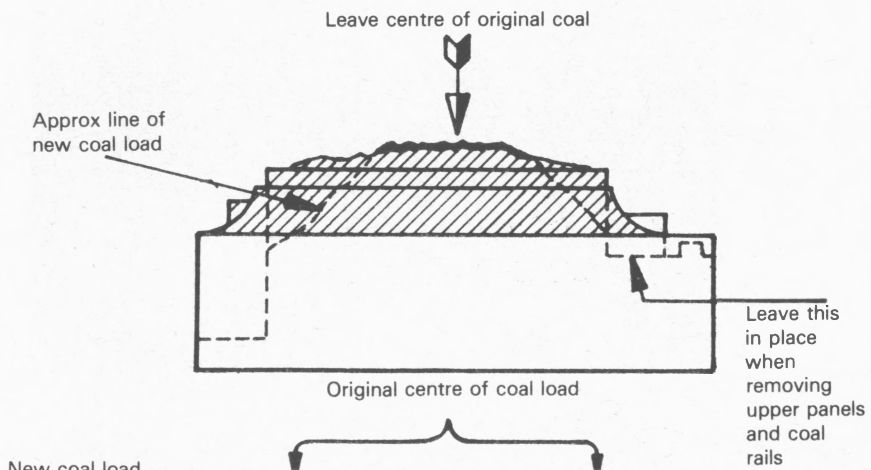
Converting Lima HO 4F for light railways

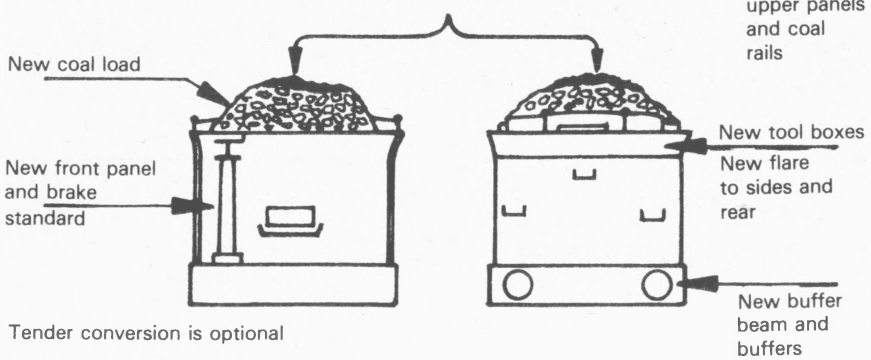


Remove shaded areas (keep buffers)



Possible freelance treatment — or follow photographs; note new boiler fittings, cab, and tool-box


Leave centre of original coal
Approx line of new coal load
Leave this in place when removing upper panels and coal rails
Original centre of coal load



Tender conversion is optional

Drawings this page not to scale

ed to help in masking its origins. However, it should be possible to cut away the top of the tender sides and part of the coal load, while retaining enough of the original to hold the motor in place. The resulting holes would need filling up with styrene or a shaped piece of fibre-glass matting to which a false profile of coal chippings could be added. Coal rails would complete the conversion. Again, it might be possible and simpler to obtain the parts of the tenders produced by Slaters for their MR locomotive kits. If so, this might save a lot of work. In my case a rapidly approaching exhibition made me take the easier route.

The advantage of tender drive to the kit-basher is that the locomotive can be extensively modified, and as there is no motor to worry about the job is relatively simple, though rather drastic. Work starts with the removal of the undersized chimney and dome, which are much too small for 4mm scale. Next, the whole boiler is removed from the footplate by a horizontal cut just above the top of the splashers. If you intend to modify the existing cab, stop the cutting level with the rear of the firebox, and saw down to separate the cab from the boiler section. As I wanted to remodel the cab completely I sawed the whole of the body off in one go. Next a slice of about 2 – 3mm was taken off the lower edge of the smokebox and firebox, so that when ultimately reassembled, the boiler was set much lower.

Take the opportunity at this point to do something about the unnecessary hole in the underside of the boiler – as there is no motor it can be filled in using a curved section of plastic cut from a Saxin tube. This material is very useful for boiler rebuilds as it saves the chore of having to bend a curve up from sheet styrene. Apply suitable Plastikard Microstrip to carry the boiler bands across the underside of the boiler. Clean up both sides of the horizontal saw-cut and then re-cement the boiler and assemble in place. An alternative would be to do away with the Belpaire firebox as well while the boiler is a separate unit. In this case a little more work with Saxin tube and styrene will be needed to produce a round topped firebox. Suitable boiler fittings can be chosen from among the available ranges marketed by W & H and K's. My personal choice was a medium height thin chimney (possibly intended for a TT G6 class tank engine) and a medium height dome of LNER origin. These were mounted over the holes in the boiler. GWR fittings for a 1400 class locomotive also look good on this conversion. Miscellaneous toolboxes and sandboxes were added to dress up the footplate, while another detail that might have been included was a Westinghouse brake pump. Finally the buffers were sawn off both the locomotive and tender and new ones provided with the buffers set at correct centres. In fact the spares box yielded up a couple of beams from an Airfix Pug kit and these were used. The rather domed buffer heads were filed flat before fitting which greatly improved their appearance.

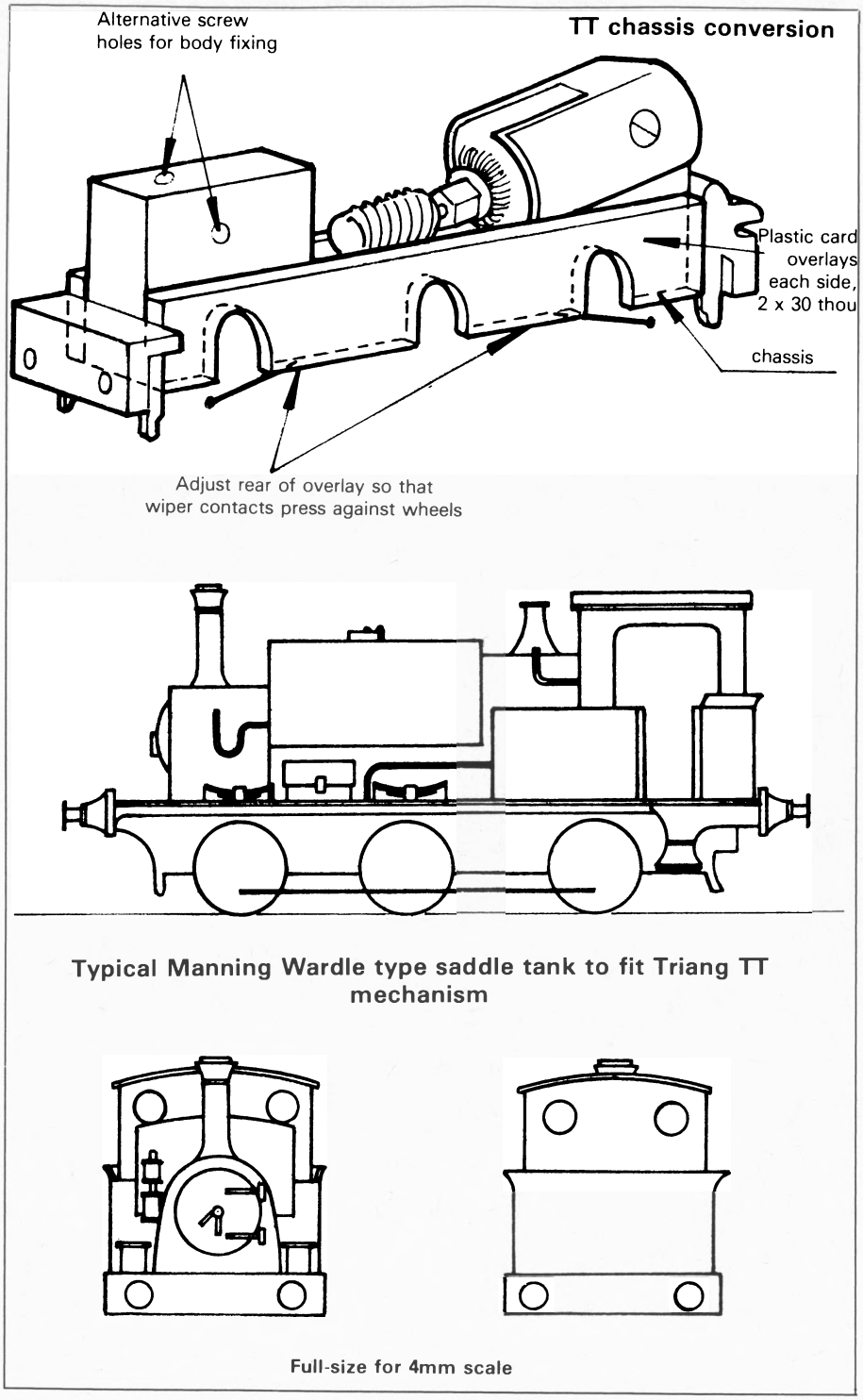
A more ambitious conversion was undertaken on a Triang TT 0-6-0 mechanism to regauge it to 16.5mm gauge for use in a freelance saddle tank. The wheels were

removed from the mechanism and set in a vice so that the TT axles could be punched out. Triang axles and wheel bushes (get more bushes than you need) were obtained from a dealer specialising in spare parts. It was then found that the 00 axles were thicker than their TT counterparts, so wheels, gear and chassis casting had to be drilled out to take the new axles. The wheels were then quartered on the axles, not forgetting to put the gear wheel on the axle with the flangeless wheels. The chassis casting needed widening, so overlays of styrene sheet with cut-outs for the axle slots were cemented on each side until the slack was taken up. The pick up wires needed bending to stick out further to connect with the regauged wheels. This involved a bit of trial and error when the chassis overlays were fitted on this side. finally the wheels were replaced in their slots, not forgetting that the bushes should all be on the same side as the pick ups. The axles should not protrude clear of the face of the wheels or else they will short out on the side rods. Any trouble here can quickly be cured with a file.

After all this activity a scratch-built body seems a simple task. Once again styrene and other bits of plastic from the spares box are used. Cut out a piece of 60 thou styrene to form the footplate and mark out the area that must be removed to accommodate the mechanism. You can either do this by trial and error, or by measuring the underside of the original TT body. Don't forget to leave a little play so that the body can be slid backwards to engage the rear fixing lugs, and check that the new buffer beams when fitted, do not bind on the chassis casting when the new body is removed. The old TT buffers are of course removed – they should just pull out of their holes in the chassis casting. In order to strengthen the footplate and help to keep it rigid lengths of N gauge rail were used as footplate valancing.

The ubiquitous Airfix Pug provided more parts for the body. The firebox was pressed into use as a smokebox by filing off the backhead detail. A wrapper of 20 thou sheet was fitted together with an overlay at the front. The Pug's smokebox door was carefully removed from the saddle tank front and thinned down by running the back on emergy paper before mounting in place. The whole assembly was then cemented on to the footplate checking the clearance over the chassis casting. The lower portions of the boiler had to be represented by pieces of styrene sheet cemented on either side of the motor aperture, a compromise that can partly be hidden by springs, toolboxes and pipework. Don't forget to include a reversing rod. Luckily the typical Manning Wardle saddle tank had a rather square, box-like section and this is easily made up from pieces of styrene, using various photographs of the prototype for inspiration. No dimensions have been given here as the exact size can vary according to taste, so long as the body can be easily removed to allow access to the motor. Remember however that the original locomotives of this type were much smaller than the average mainline 0-6-0T, and could be towered over by a tall roofed coach or van.

Plans of the various classes of MW saddle

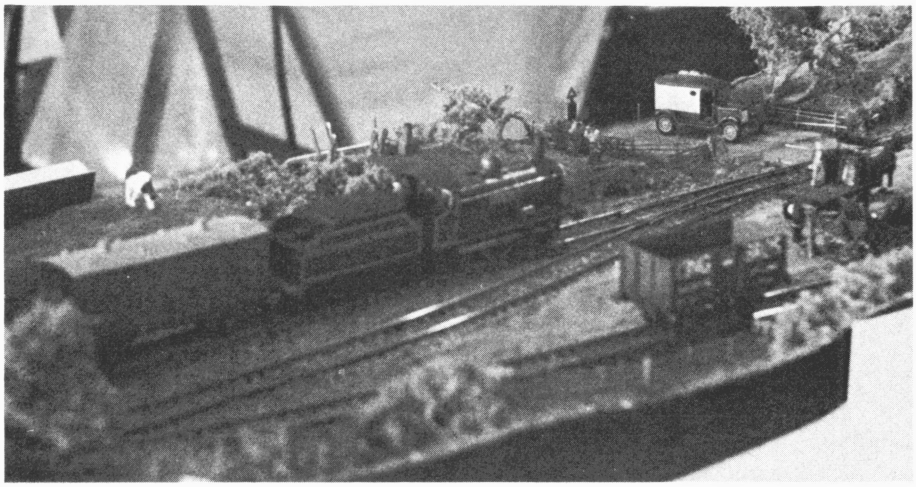

TT chassis conversion
Alternative screw holes for body fixing
Plastic card overlays each side, 2 x 30 thou
chassis
Adjust rear of overlay so that wiper contacts press against wheels
Typical Manning Wardle type saddle tank to fit Triang TT mechanism
Full-size for 4mm scale

A mixed train drifts into Wittering, headed by 'Albert', another Black Anna conversion. Note the coal wagon tacked on behind the last coach — a realistic touch which also helps to make operating interesting. The two-way signal is a money saving feature copied from the Hawkhurst branch. Beside the signal is the engine shed — the lean-to shack beside it houses the local workshop facilities.

tanks appeared some years ago in the *Railway Modeller* in a series on Industrial Railway Locomotives. These locomotives originally had very open cabs, little more than a weather sheet bent into an inverted U shape. In the model version I substituted a full cab built from bits in the spares box, so as to provide additional strength and also to hide the motor. I did however provide a coal bunker with the typically rounded and radiused corners. This came from a toy kit of an American Civil War engine and had been waiting to be used up for longer than I care to remember. The same could have been made from plastic card without any difficulty. Cab steps came from the Pug kit again and boiler fittings were chosen to resemble photographs of the original. The K's Terrier chimney is not far off the right pattern, only one tank filler is needed, and the safety valve is not unlike the early MR pattern fitted with a cover. As this is a freelance model anyway, Ross 'pop' valves could just as easily be fitted – or anything else that is to hand. In use, these engines tended to get rebuilt on shoestring budgets, often utilising whatever was around the workshop or surplus off another derelict locomotive, to complete the job.

Other suitable models for light railway use can be found in the lists of the white metal kit manufacturers. The K's Terrier is an obvious choice and several prototype lines bought one or more of these engines when they were sold out of main line service. Other small locomotives are the P class 0-6-0T from Wills, the Y-7 class from Nu-Cast, and the MR and Taff Vale 0-4-0 saddle tanks from K's would also be useful.

Rolling stock suitable for use is much more simple to provide. As far as coaches are concerned you can't go wrong with something four-wheeled, or six-wheeled if you are using a minimum radius of three feet. K's and Ratio will amply fill the bill as old coaches from many sources were used, with pre-grouping examples lasting well into the 1930s and even later in some cases. The Weston, Clevedon & Portishead Light Railway owned a rake of American built bogie coaches and HO coaches of a suitable sort could be obtained from Tyco, Rivarossi or other American sources. These would only need a repaint and the fitting of buffers and compatible couplings before being put into service. Although these coaches would be to HO scale the large dimensions of their prototypes together with the small size of corresponding light railway motive power should even things out. I used a Tyco old time passenger car to make a passable model of a Falcon-built coach for my West Sussex Railway. The clerestory roof was discarded and a new arc roof fitted with two lamp pots. The body was removed from the chassis, and pieces of styrene 3mm high and the width of the body were cemented onto the bottom of each end wall to make the whole body sit higher when remounted in place. The matchboard planking and doorway detail were scored on to this fillet using the blade of a miniature screwdriver. The side windows were enlarged with a Swiss file and new glazing provided before the body was refitted. On the balconies, new corner posts of wire and balcony rails of fine expanded metal mesh were fitted. An alternative would have been to use fine muslin netting stiffened with shellac. Panelling round the windows was provided by Microstrip, and new buffer beams with round headed coach buffers completed the conversion apart from the necessity of a repaint.



The WSR's big locomotive — a converted Lima 0-6-0, which has been given a new cab and boiler fittings. The tender has been left in its original condition.

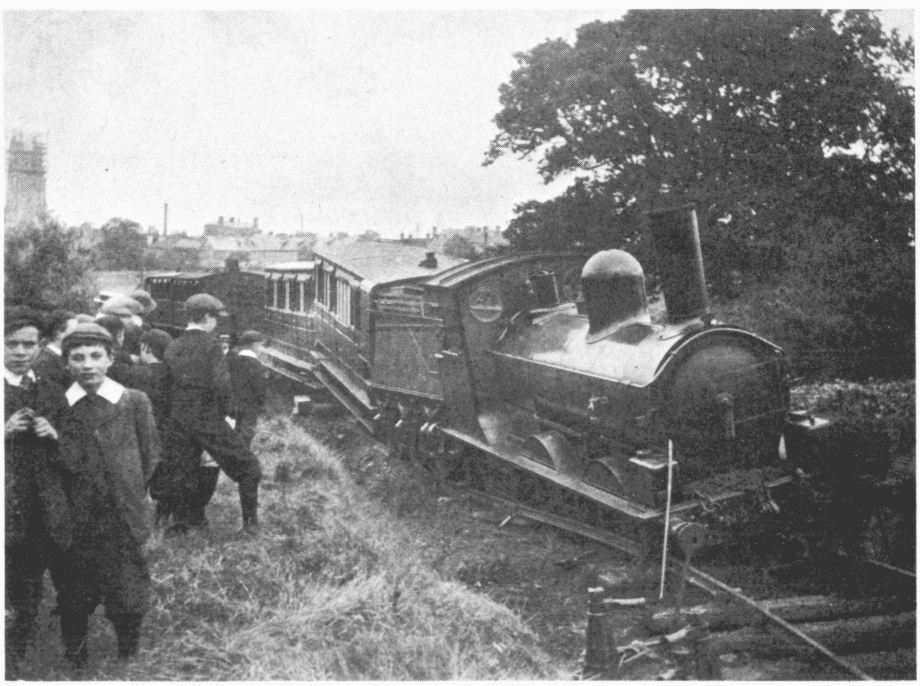
The basic rule for goods stock is: stick to pre-group types for the light railway's own stock. Wagons with brakes on one or two wheels only could still be in use for internal traffic long after such practices had been outlawed by the big companies. Nice looking wagons which seem suitably archaic would be the K's SECR bow-ended open wagon and their 8 ton SECR goods van, while Slater's MR goods van is also suitable. It has the advantage of being made of styrene rather than white metal which may be a consideration where small engines are to be used. Various kits for RCH standard wagons are also available. Trains often ran mixed and not all lines used goods brake vans. Off-line interchange traffic was carried in wagons belonging to the main line companies and it is these that will establish the period of the model along with non railway items like road vehicles and the advertisements on the station's railings.

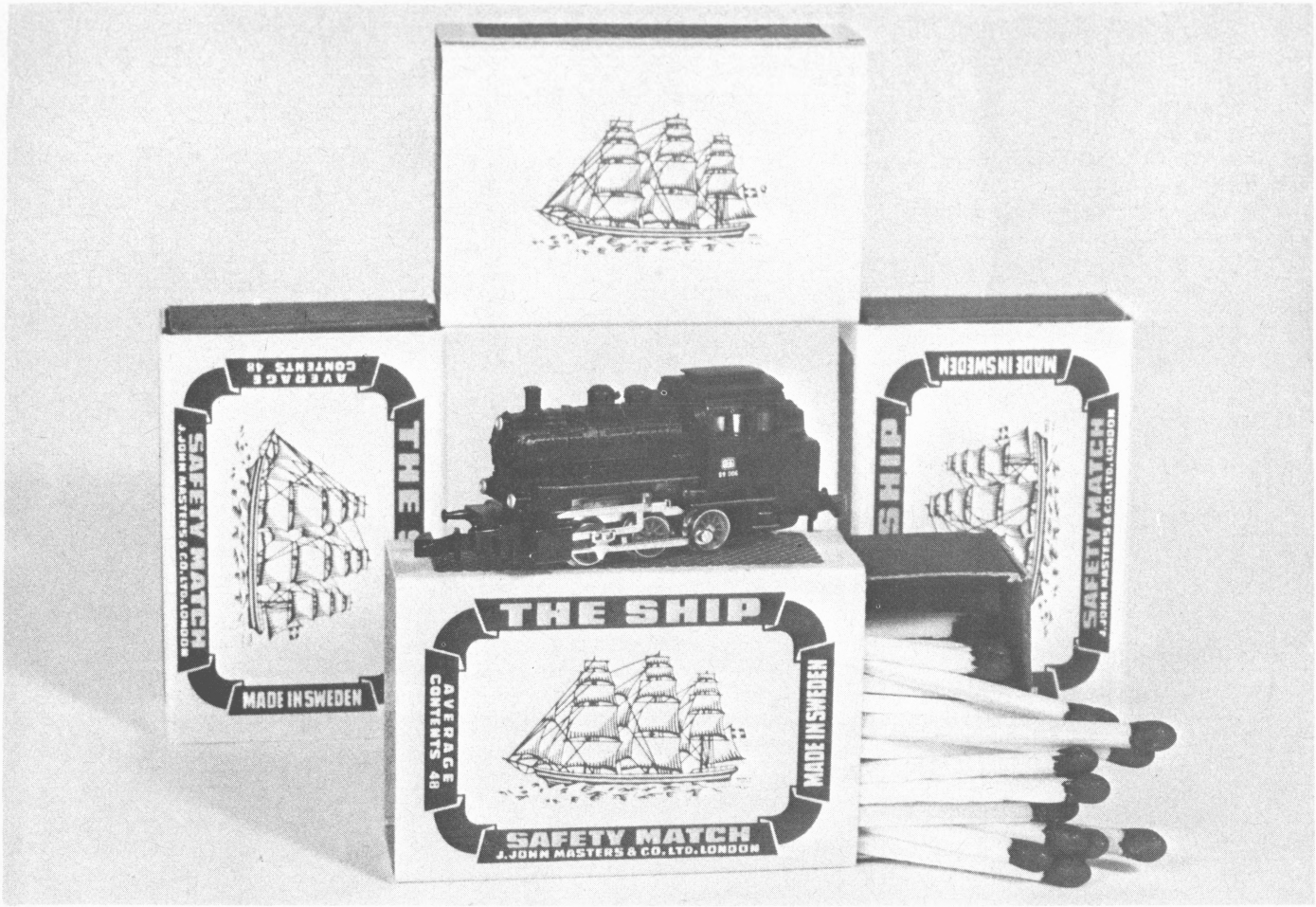
As can be seen, there is plenty that is available for use, either as bought or adapted, to enable a model, albeit freelance, to be constructed. I have not even touched on the petrol railbuses, railcars and steam rail-motors that existed and these and other exotica would keep a scratch-builder busy for some time, such is the appeal of light railway modelling.

Models suggested here are ideal for use on the Willow Valley Light Railway layout project. See also the November 1981 issue and 0-4-0ST conversion in the October 1980 issue.

Photos by Giles Barnabe or from author's collection

An unfortunate incident on the K & ESR. The picture does however show a typical light railway tender locomotive, and the sort of passenger stock commonly in use (Tenterden Railway Co).





The size of a Z gauge engine is beautifully illustrated by this Märklin Mini-Club tank loco on a matchbox.

Make it in Z gauge

Steve Rabone makes the track for the Bischofsgrun layout.

As mentioned in the first article of this series, all the track on my Z gauge layout was built using the soldering of rail on to printed circuit board technique. I chose this method partly as a challenge, but also to save costs. The use of handbuilt track in no way implies any criticism of Märklin's track, in fact many readers I am sure will prefer Miniclub track to mine! In Z gauge track building requires care and patience, as in every other scale, but the difficulties are nowhere near as great as one might imagine. In fact I found the construction easier in some respects than in larger scales. The main requirements for successfully producing your own points and track, are a little patience, a moderate skill with a soldering iron (soon learnt) and above all a willingness to keep checking and testing throughout the construction of the point. Rather than launch straight into building your first point I recommend that you try your hand at making a few inches of plain straight track. This way you will get used to the method of soldering, where you hold the iron in one hand and the track gauge and the solder in the other!

All the techniques shown in this article are applicable of course to all other scales and this method of track construction is eminently suitable in gauges N, TT, HO/OO and even in O. The materials and tool used are also the same, only with variations according to scale. Below I list the tools and materials I used in constructing the Z gauge track on my layout.

Tools

(1) A fine soldering iron of the type used in electronics work. A large soldering iron is totally unsuitable.
(2) A sheet of chipboard, preferably ¾ inch and absolutely flat, for building the point on.
(3) A length of hardwood with four panel pins driven in to hold the rail steady whilst it is being filed to shape.
(4) A small flat file for filing point blades etc.
(5) A fine abrafile for 'gapping' the sleepers. The type sold for use as fretsaw files are best.
(6) A pair of fine pointed electrical pliers with a built-in wire cutting blade.
(7) A pair of side snips for cutting the rail.
(8) A craft knife with an old blade in it.
(9) A straight edge ruler, preferably metal.
(10) A track gauge. Unfortunately, these are not available yet in Z gauge, but I made one by cutting a thick piece of card to fit between the rails of a length of Märklin straight track. A lollipop stick cut to size would probably be better. Track gauges are widely available in all other gauges. The gauge of Z gauge track is of course 6.5mm.

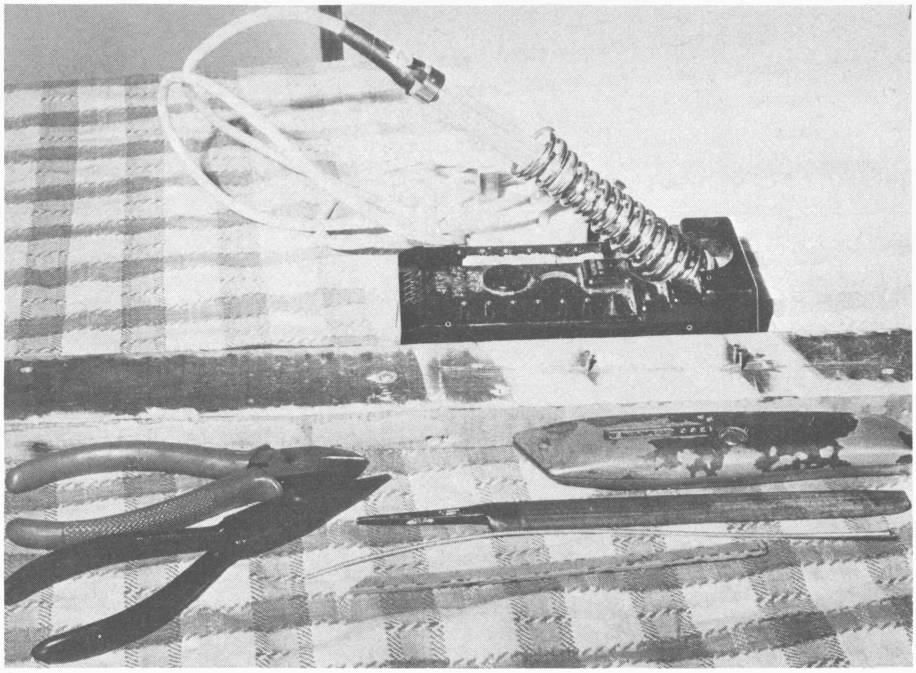
Materials

(1) Bull headed rail of code 65. I use SMP rail which is available in packs of twelve yards. This rail is virtually the same height as that used by Märklin and bull-headed rail is considerably easier to file than flat bottomed rail.
(2) Copperclad sleeper strip. I use the type supplied in 300mm lengths by Slaters for N gauge use. It is a little over width for Z gauge but when the track is painted and ballasted it isn't too obvious. Maybe some manufacturer will produce Z gauge sleeper strip in due course. There are several other types of N gauge sleeper strip available but these tend to be much too wide for our purposes.
(3) Multicore solder and flux.
(4) A good drawing of the point you propose to construct.
(5) Ordinary Sellotape and double sided Sellotape.

Construction

The main tools required are shown in photo 1. I forgot the straight edge rule when I took it!

The point diagram is drawn full-size on to a sheet of good quality paper and stuck as flat as possible to the chipboard with plain Sellotape along the edges. Photocopy the diagram if required to obtain several identical drawings of the point and stick the photocopy on to the board. The double sided Sellotape is then carefully stuck to the diagram where the sleepers will go. First stick a length along the straight line and then another length where the curved line



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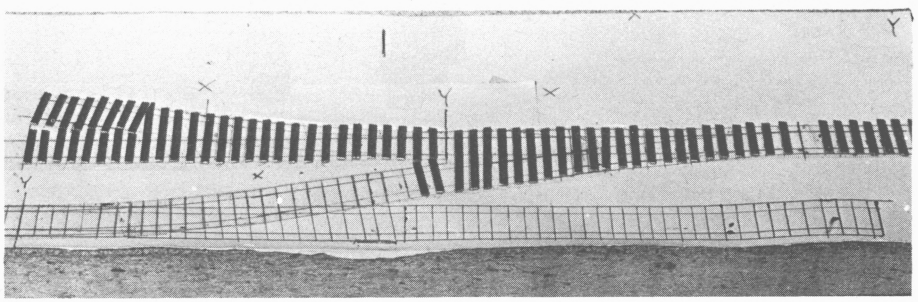

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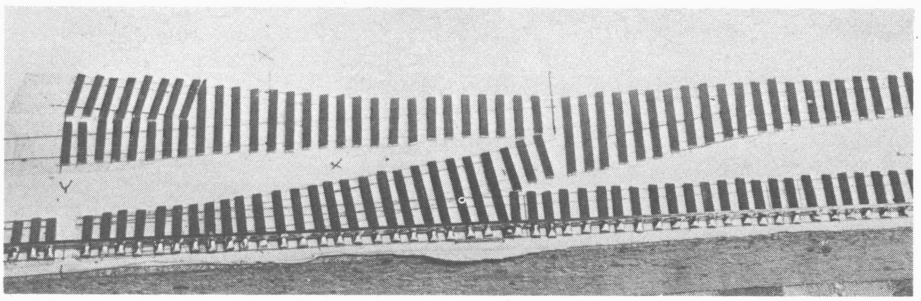

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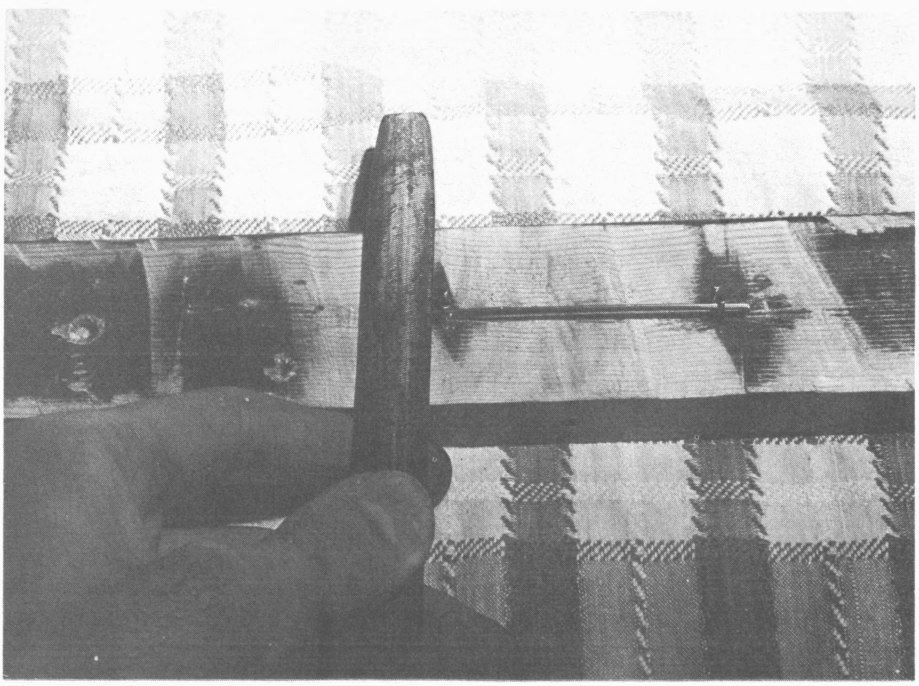

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diverges.

Mark the length of each sleeper in turn with a felt tip pen and cut with pliers or a craft knife. (See photo 2). Use an old blade as the printed circuit board will quickly blunt a new blade. Press the sleepers firmly on to the diagram making the gaps between sleepers as even as possible. When all the sleepers are in place, carefully score two lines across the Sellotape where the point tie bar will be and peel back the Sellotape. If you don't do this it will be difficult to test the point during construction. Next gently rub over the surface of the copper with a piece of emery paper to remove any grease or dirt.

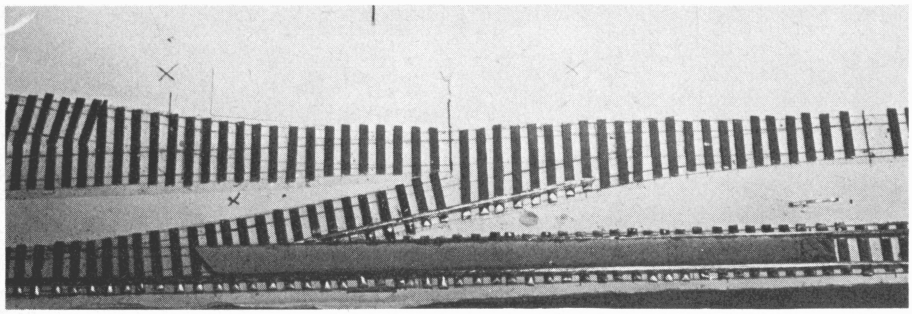
Cut a length of rail to the required length for the straight stock rail (see photo 3). File the ends smooth on the top, bottom and the inside edge of the rail. This slight bevelling of the corners leads to better running. Solder one end of the rail to the first sleeper at frog end of the point so that the rail is directly over the line on the drawing. Place the straight edge against the rail and solder the rail every inch or so to a sleeper making sure that the rail is straight. Pick the board up and look along the rail. Any wavering from the straight should be apparent instantly. Correct this and then solder to the rest of the sleepers starting at one end and working along to the other. Note that if you use flat bottomed rail instead of bullheaded rail it will be necessary to file away part of the base of the rail on the inside to allow the point blade to lie close to the stock rail.

Cut a short length of rail to form the straight rail of the frog (see photo 4). Using the filing board file one end of the rail to a fine point on one side. Using the track gauge solder the rail in the correct position on the drawing so that the filed end of the rail is at the point of the frog (see photo 5). Cut the second frog rail and solder in place making sure that the point of the frog is as sharp as possible. A little solder should be applied to the tip of the frog to join the two rails and the top of the frog filed smooth.

Cut the curved stock rail to length and bend to the required shape (see photo 6). Using the track gauge solder the stock rail in place first at the frog end of the point and then at the toe end gauged to the straight stock rail. It is a good idea to make the curved stock rail straight for about ½ in before the point of the frog to aid smooth running. Finally solder all other sleepers to the stock rail.

Using the filing board file the point blades to a fine point for about 2 cm from one end (see photo 7). Do this on opposite sides of the rail for each blade. Using the diagram as a guide, bend the point blades to make the angle where the wing rails start. There should be a gap of about 1 mm between the wing rails and the frog rails. Solder the curved point blades in place first, and gauge carefully. Use a straight edge to ensure that the point blades and the frog rails are exactly in line with each other. Only solder the blade/wing rails to the sleepers where shown in the diagram. At this stage test the point with a wagon to ensure smooth running through the curved line of the point.

Solder the second point blade in position using the straight edge to ensure accurate alignment at the frog (see photo 8). Cut a



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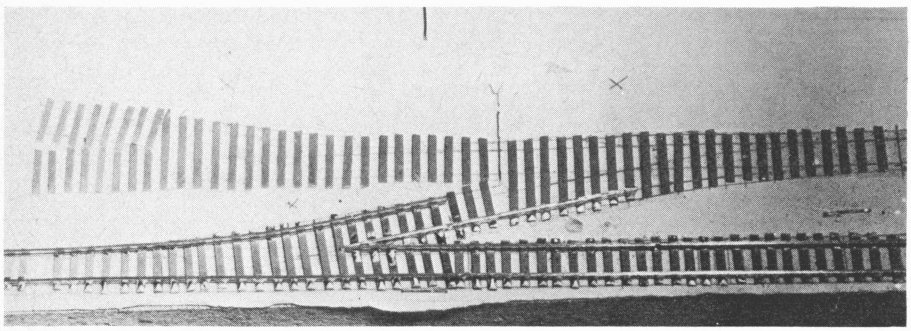

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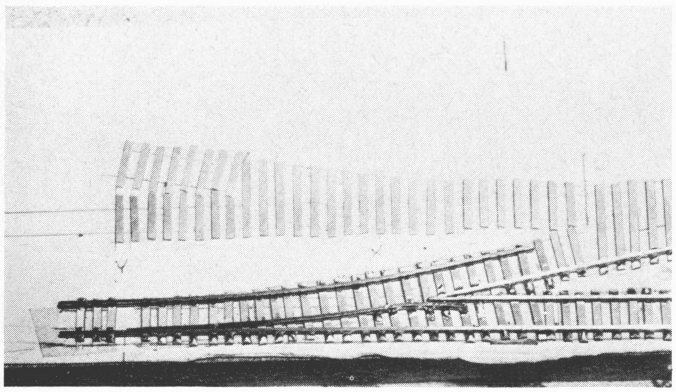

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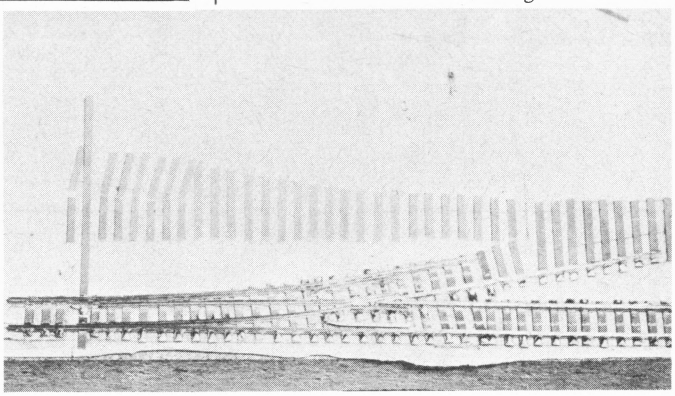

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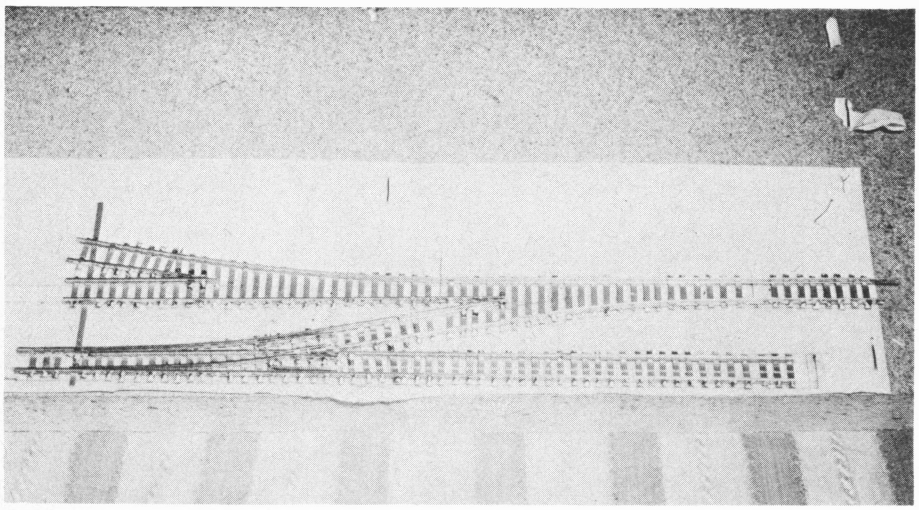

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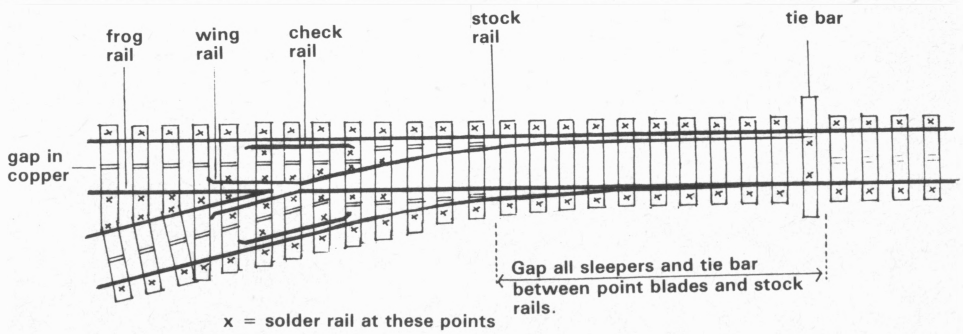
length of sleeper strip to the required length for the tie bar and place in the gap under the end of the point blades. Note that sometimes it is convenient to have a long tiebar which passes under other rails before being fastened to the operating wire. To solder the rail to the tie bar hold one of the blades against the stock rail and solder in place. Don't take too long to do this or the point blade will not be soldered to the stock rail. Move the tie bar about 2mm across and solder the second tie bar in place. If the gap between the stock rail and the point blade is too small, loco wheels will short circuit the current as they pass throught the point. If necessary, carefully file away any solder which is in the wrong place on the blade ends and bevel the upper edges of the tips of the blades. Once again test the point for smooth running with a wagon.

The check rails should be soldered in position opposite the frog gap so that the wheels cannot take the incorrect route. Cut the rails to length and bend back slightly the ends of the rails as shown in the diagram. Place on the point so that there is a gap of about 1mm between them and the stock rails. Solder in place at either end only. Then test with a wagon. A little experimentation will soon find the correct distance from the stock rail. Too wide a gap and the wheels will take the wrong line at the frog; too narrow a gap and the wheels will bind as they pass through the check rails. Once the wagon will run smoothly through the point in all directions, clean the point carefully with a file to remove any excess solder.

If you are building a group of points as in the illustration, proceed in the same way to build up each point. Don't forget that as the points are live frog and self isolating it will be necessary to leave a gap in the rails where two points face each other to prevent short circuits (see photo 9). The wiring diagrams should make this clear. It is a good idea to

Note that by December 1981 Peco will have available Streamline flex-track for Z gauge; it could be used in conjunction with turn-outs made as described here.



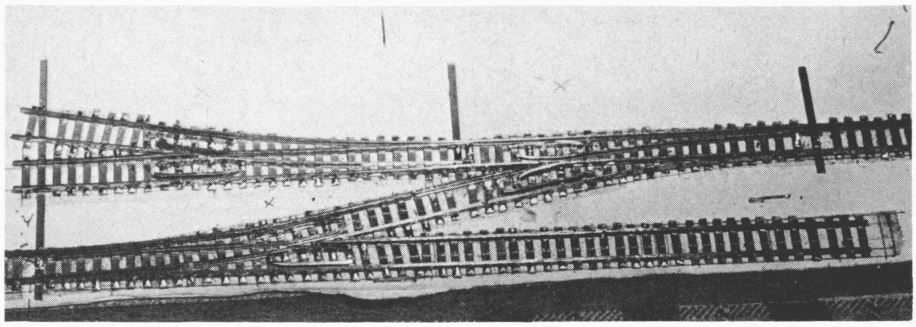
x = solder rail at these points

Diagram drawn actual size

If you wish to use this for track construction why not take a photo copy, cut it out, turn it over and use as an additional template.

stagger these rail gaps as this makes the completed point formation stronger and leads to smoother operation. Where gaps are left, ensure that the rails are really in line with each other. Building up points in groups is slightly harder than building each point separate ly, but it means that points can be built with their blades almost next to the frog of another point, a real space saver. The other advantage is that there are fewer rail joints to create running problems.

The completed track formation for the station entrance (see photo 10). Note the gaps in the copper surface of the sleepers. I use a fine abrafile for most gaps, but sometimes in restricted spaces the craft knife is used to gently scrape away the surface. The golden rule is to remember that there must be a gap between all rails which are fed with opposing poles to prevent an electrical short circuit. One area that is easy to forget is tie bars that pass under other tracks. These must be gapped both between the rails of all lines they pass under and also between adjacent tracks. Testing for short circuits is fairly easy. Always feed the electricity from the blade end of the point. Usually you will find that not all of the gaps are complete, or there is a little swarf of copper bridging the gap, often



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down the side of the sleeper almost out of sight! It sounds complicated but a little perseverance will put things right.

Finally remove the completed point from the backing paper by laying the point face down on the table and gently pulling the diagram away. A few sleepers may come loose if your soldering isn't perfect, but it's an easy job to resolder them. Give the point a good, but gentle scrub under running water with a little detergent to remove grease. To complete the testing, I usually fasten the clean (and dry) point to a board with a short length of double sided Sellotape, connect the controller and run a loco through the point holding the point blades over with my fingers. Some adjustments may still be necessary but once you have the point working satisfactorily you may sit back and admire your first handbuilt point. It's by no means as difficult as it looks. I am a typical ham fisted modeller and I shudder to recollect what my first point looked like, but it worked, just! One final piece of advice, if your first point doesn't work satisfactorily have another go and learn from your mistakes. After all, isn't the cost saving worth the perseverance?

Next month we will look at track laying, wiring the layout (a very simple job) and ballasting. Until then heat up your soldering iron and get tracking!

Clubs, Societies and Exhibitions

The Epsom and Ewell MRS meet at St Francis Church Hall, Ruxley Lane, West Ewell, every Monday evening from 7.30 onwards. All new members welcome and enquiries should be made to John Rattenbury, 7 Riverview Rd, Ewell, Epsom.

Birmingham & District Model Railway Construction Group and Solihull Model Railway Circle combine to present a Model Railway Exhibition at the Scout HQ Building (Rear of Maxims) Stratford Road, Shirley, Solihull on December 5. Open 9.30 – 17.00. Adults 40p. Children & Senior Citizens 20p.

Preston and District MRS invite the public to attend their club rooms on November 22 for an exhibition. 10.00 – 17.00. Adults 30p, children and OAPs 15p. 5/6 layouts and second-hand stall. For further details write to W.N. Davies, 21 Peddars Grove, Ashton, Preston.

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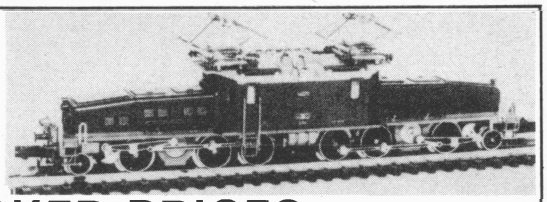

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Roadscene

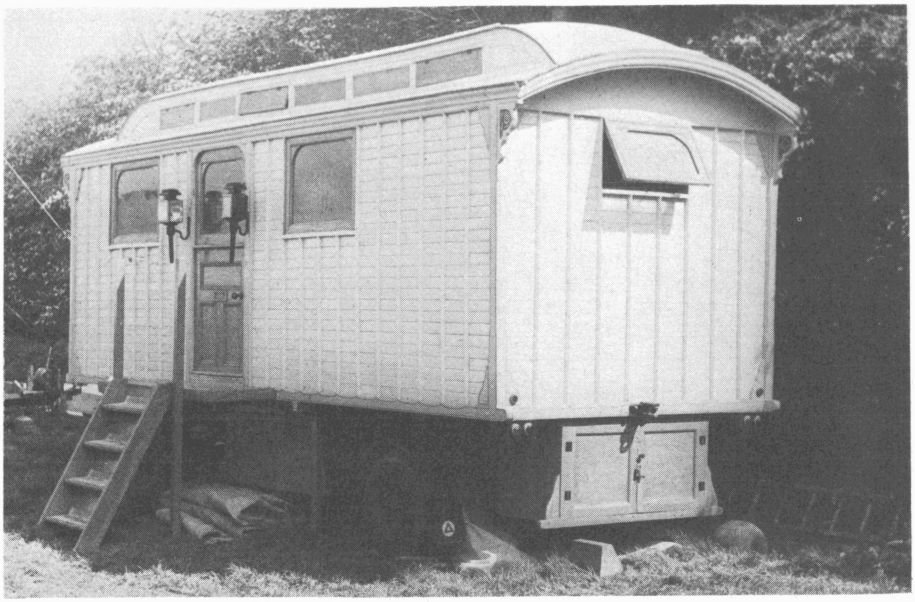
A survey by Gerald Scarborough of road vehicle models of interest to rail modellers.

In the June issue I mentioned briefly the Heller range of 1:43 scale 0 gauge car kits and also commented that there were very few commercials available from any manufacturer. Heller have, with their latest kit, gone some way to putting this state of affairs right with a Land Rover. This is the long wheelbase, 109 series, with a safari type body but of course it is convertible to almost any configuration even to a six-wheeler. Land Rovers are used by so many commercial concerns, civil engineers, the motoring organisations, contractors, farmers, fire brigades, mountain rescue and the armed forces that there should be no trouble finding a suitable colour scheme. This is the first kit in the series from Heller of a right hand drive vehicle and the kit is well up to their usual standard. The one point on which I have reservations is the wheels which are lacking the distinctive off-road pattern so typical of Land Rovers and are to my eye a bit too narrow. Laborious work with a file will cut in a tread, easier done before the wheels halves are cemented together, and a disc of plastic card between the halves will broaden the tread. Unfortunately there is no spare wheel to go on the bonnet top although this is shown on the box artwork illustration.

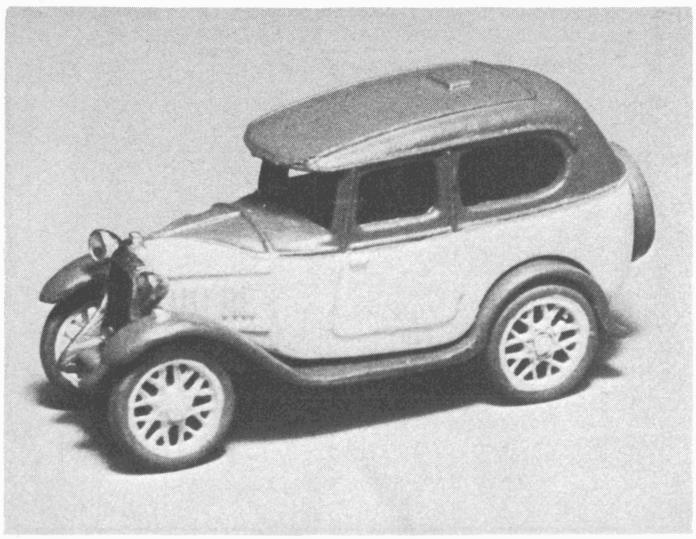
Thanks to reader Nev Fadrics (Trainlines, June issue) who let us know that Showman's caravans are still to be found in the North West and the Editor who confirms they are also to be found in the South. They are also in the East as my photograph, taken at Carrington Park, near Boston, confirms. This is very similar to the Fraction Models kit and may be of help to modellers who are not familiar with the prototypes.

DG Models of 2, Linden Avenue, Halesowen, West Midlands, B62 9EL, have been busy again with another batch of kits in 00 gauge. Dave Gilbert has the knack of coming up with some unusual prototypes and certainly has the skills to produce some fine little kits. The 1930 Austin Swallow and the 1931 Morris Tourer are two examples which capture the style of the originals, are very clearly cast and simple to construct. Just fractionally over 1½ inches long these diminutive little models are nevertheless well detailed, require minimal cleaning up, but careful painting. The Swallow is in off white and brown, the Morris in dark green, all semi-gloss railway enamels from the Humbrol and Gloy ranges. The light commercials are not neglected by DG Models and a fine Ford 'A' 10 cwt van from about 1930 is added to the range and this comes complete with a set of transfers for the side panels. My model was finished in light brown and tan with the roof in ivory. Last of the new releases from DG this month is the 1934 Austin LL Taxi, a real little classic this, and essential for every model railway layout of around this period. Really keen modellers may like to try their hands at adding a roof luggage rack from thin fuse wire but the model as illustrated is, as are they all, straight from the kit. Actually none of these are completed as I intend to add glazing to the windows and therefore the bodies are not even fixed down to the chassis. As the range from DG is increasing rapidly do send a SAE for the latest lists and prices.

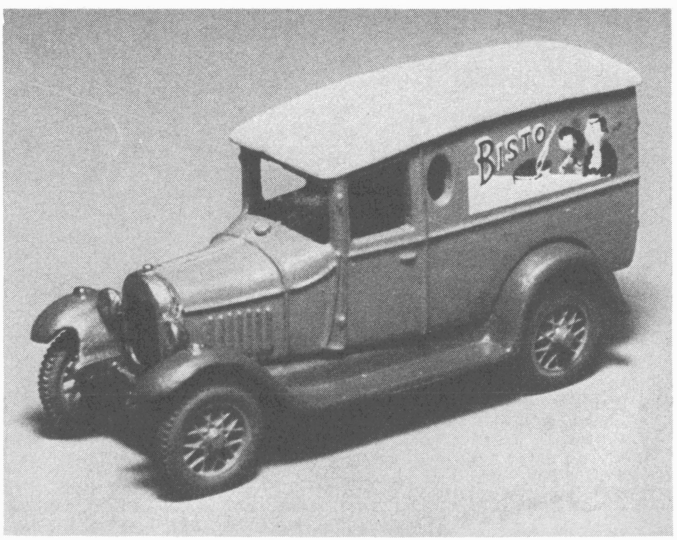
In the July Roadscene I mentioned the two new plastic kits from Merit and I have now had time to have a look at these and indeed to put them together. In the next Roadscene I will also describe a couple of simple conversions but meanwhile to the kits as they are. First is a 1929 Maudsley ML3 Bus with Buckingham body, a type used by the Great Western Railway among others. I decided to



Showman's living van in a first class state of preservation.



D.G. Models Austin Swallow, nicely detailed for such a small model.



The 1930 Ford 'A' 10cwt van by D.G. Models.

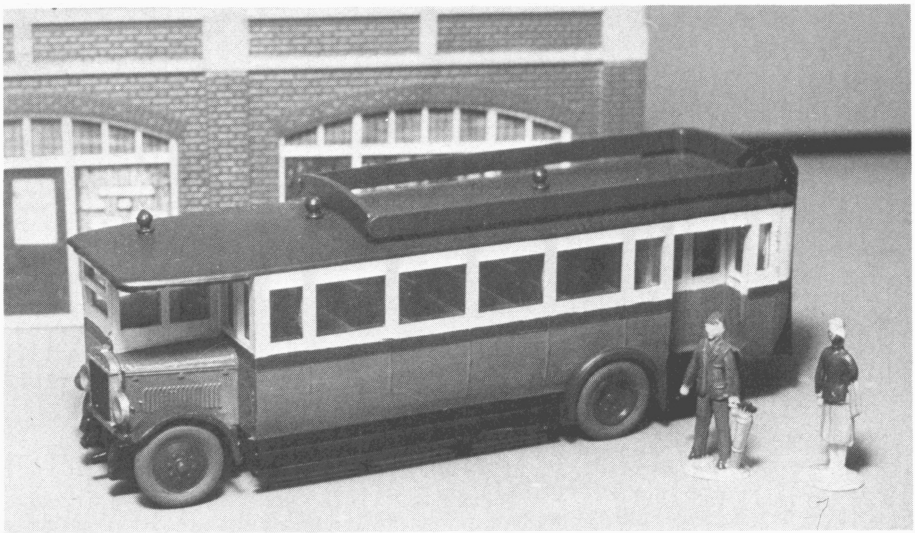
paint mine in the livery of Bartons but I confess I have no evidence to prove they did in fact use this type. The kit is, I believe, the first injection moulded plastic kit of a bus in this scale and of course is much simpler to construct than the white metal bus kits we have seen in earlier Roadscenes. The quality of the moulding can be seen before you buy as these Merit kits are bubble packed and at the price you can afford more than one to enhance your model railway layout. One of the more obvious ways to improve the model is to glaze the windows and the bubble pack can be used if you have nothing else suitable. I would suggest this is done after the interior has been painted but before fitting the seats. Five Minute Epoxy resin can be used for this job, it will stick the clear plastic to the paintwork with no trouble. Leave clearance at the top to allow the roof to fit neatly in place. Construction will be simplified if the painting is done as you go, in fact this is suggested in the instructions.

The Thornycroft PB is typical of the era around 1926 and of course is a gift for GWR fans as they were prolific users of Thornycroft types. Indeed Thornycroft were popular with most of the railway companies as well as private hauliers. Again construction of the kit is simple, I think the only snag I had was getting the handbrake through the floor slot but this was soon overcome by opening out the slot a fraction. The rear part of the tilt is designed to slide right forward past the cab and should have metal strips at front and rear sides to locate it to the body. These can be added from short strips of Microstrip. There are several illustrations of both these vehicles in *Road Vehicles of the GWR* by Kelley which are useful if you wish to add further detail. As the kits are presented they can be assembled virtually 'from the box' to give a pair of very attractive little models. Unfortunately mine lack transfers at the moment as my part of the country is not well stocked with the necessities of life. Further details of Merit kits and accessories can be obtained from J & L Randall Ltd., Merit House, Cranborne Road, Potters Bar, Herts, EN6 3JY.

Right: *Maudsley and Thornycroft, the two Merit kits which should prove popular models. Note the Thornycroft has its front wheels turned to the right.*

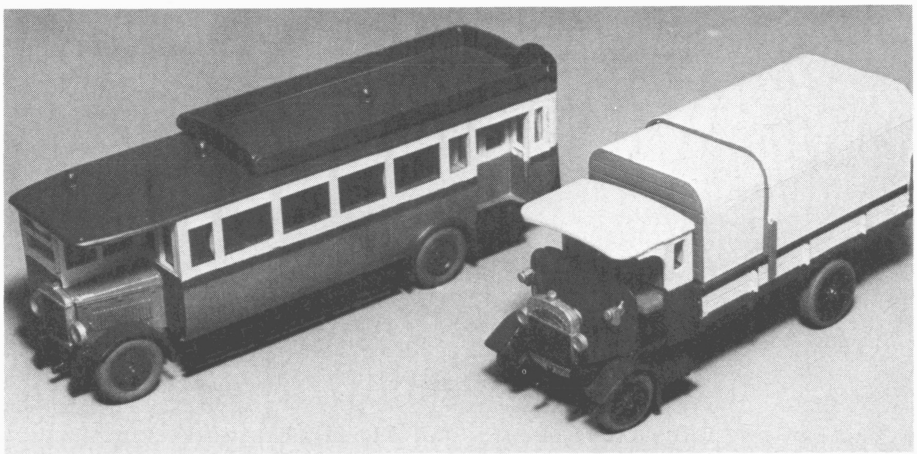
Below: *The 1934 Austin LL Taxi, another of the D.G. Kits.*

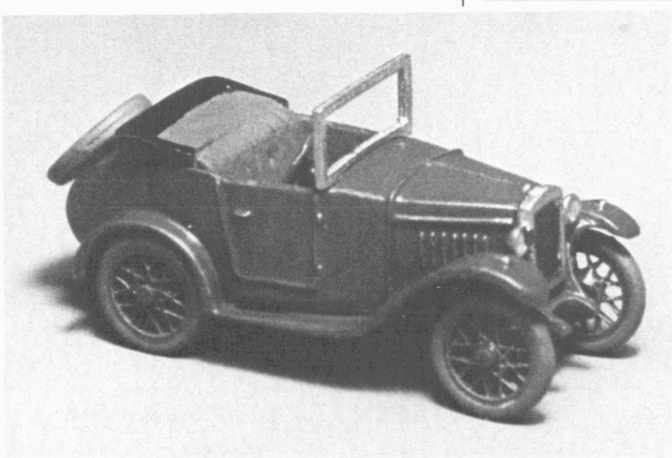
The Morris Tourer is another D.G. Models kit.

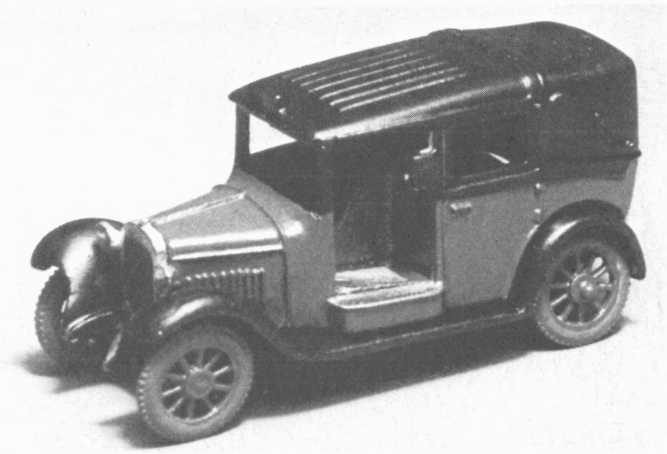


The Maudsley ML3 by Merit in Barton colours parked outside a Wills Shop Front. Passengers are also Merit.

The Merit kit of the Thornycroft awaits its GWR lettering. This view shows the tilt in travelling position.







Matters arising from p.619

fact that these instances apply only to 4mm scale modellers and that workers in other scales will have different priorities, underlines how much modellers all have different ideas, and this applies to reviews as much as anything else.

So even our product reviews have to be compromises of a sort. Most of the 'matters arising' which led to all this seem to concern mainly locomotives, the glamour items of the hobby. Yet we get all sorts of things from card cut-outs to wagons which have to be examined, run where applicable, made up if in kit form, usually photographed, and finally written-up all against a monthly deadline and while the item concerned is still topical.

I can't speak for others, but our policy here is to assess each new model or item from the point of view of that much cited person the 'average reader'. For example I might not be a LNER enthusiast when it comes to personal modelling, but if we have Hornby's *Flying Scotsman* in front of us we try to look at it from the point of view of a reader who is a LNER enthusiast and therefore the person most likely to worry about that model. We follow the concensus view, I suppose, in that if there are points of detail which the legendary 'average reader' or 'average modeller' can correct easily enough, we are less harsh in our judgement than if there are fundamental errors in matters of detail or dimension. If we did not follow the concensus view we would damn all 00 (or come to that N) models because the couplers, wheels, and gauges were rather sorry compromises. But the consensus view accepts this to start with in the case of an OO gauge model.

When it comes to real in-depth reviewing (and we go as deep as our time and references allow, at least with locos and rolling stock) I can appreciate the ideal – a neat work room, test tracks of various sorts, access to much reference material for cross-checking, assorted control equipment, and much else. Above all time. All this costs money, and I do not know any British model railway magazine which has either the staff, the money, or the time to devote to such consumer testing. Maybe an amateur set-up could do better, and if so we wish them well.

Everything I've said here reflects the reviewing policy of *Model Trains* (and is in no way influenced by advertising considerations I might add – sometimes we buy models if there is no other way of getting samples), so don't take these words as reflecting the attitude of the model railway press as a whole. These comments, however, should answer those who have contrasted our reviews with others or asked us just what our reviewing policy is! **Chris Ellis**

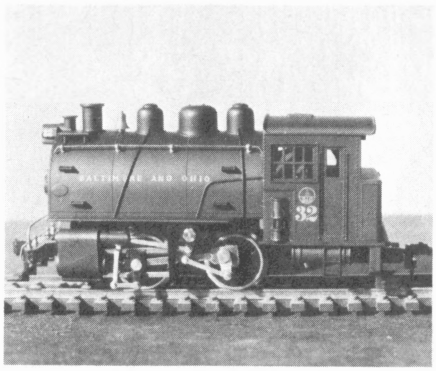
In this feature we take a closer look at the selected items which are tested and assessed by the editorial staff or contributors

Pemco: PRR GG-1, 1:87 scale/H0 gauge, UK £28.50

Biggest of the Pemco locos so far released, this is quite a spectacular model. The classic 'Black Jack' is one of the most famous of American loco types, dating from 1934 with quite a few still in service and probably good for a few years yet. Raymond Loewy, famous as an industrial designer, styled the body work to such good effect that it can hardly be said to have dated at all. The class did great things for the PRR image in the 1930s. In technical terms the GG-1 class is a 2-Co + Co-2 articulated type for 11KV overhead electric supply. Excellent working pantographs are fitted, though they are dummies which do not pick up. It might be possible to wire them in though. Model actually picks up from the track in the normal way. The moulding, detailing, and finish of this model is exemplary, and very accurate with the correct style of Craw Clarendon lettering used by the PRR. The tuscan red 'passenger' finish dates the model period as mid 1941 through to the early 1950s, and only twelve were in this colour, the balance being in PRR dark green, available as another option on the model. On the road the trailing pantograph was used. Pick up is to all axles on the model, but the insulated wheels are all black while the live wheels have bright rims. This gives an odd visual effect, the answer being to paint all the wheel rims black when you put the model into service. Drive is to three axles on one half of the articulated chassis. The performance is good, like that of the SD-35, being quiet and powerful with a good slow speed range and a gearing which keeps even top speed quite realistic and in keeping with the real thing. We could not test hauling power — a large layout would be needed to do so — but it should be able to handle scale length top expresses. Only the end piping and the cab steps below body level were missing when we checked out the model against drawings and photos. Steps could be fabricated and glued to the chassis sides, using plastic card, and this would remedy the one detail omission which really shows. The model will take 15 inch radius curves, but it is really at home on a big layout with long trains. Currently No 4877 is still running on specials in the PRR tuscan red scheme, having been restored to the old style, and another is running in green. All survivors are now operated on commuter runs to New York by New Jersey Transit Co or serve Conrail for freight, the Amtrak allocation having recently been withdrawn. With luck Pemco will produce further options in current paint finishes. Eastern Models are the Pemco UK distributors and specialist American retailers in UK hold stocks. Price shown is approximate due to fluctuating exchange rates.

Pemco: B & O C-16, 1:87 scale/H0 gauge, UK £11.50

'Little Joe', the diminutive Baltimore & Ohio Pratt Street switcher has been much modelled in the past. This is the latest to appear, a new model for the Pemco firm, but made in Hong Kong by the factory producing the Airfix/GMR models. In engineering terms and in quality of finish there are family similarities between the Pemco model and Airfix British models as you might expect. The Pemco C-16 is very like the existing Rivarossi/AHM model in layout and style, with a similar motor and drive. Also the wheels are a scale 4ft rather than the 3½ft diameter of the original in both cases. In all other dimensions the Pemco (and indeed the Rivarossi) model checks out well against scale drawings. The moulding of the body is rather finer by Pemco, the rivet detail being more subdued. The wheel flanges are shallower, too, though they are rather deeper than RP25 section and the tread is fractionally wider. As with the Rivarossi model, there is no cut away in the tank side for the power reverse equipment. If you buy this model you'll need to do all the extra detail work we described in a special article in the September 1980 issue. In addition, though the model has neat Dulux Gold lettering, it has a completely bogus number and Capitol badge on the cab side. These need replacing with the correct number for accuracy — B & O transfer sheets are available from specialist stockists of American models. On the front pilot beam is a coupler pin lift handle and the handrail, both from wire, though the latter is set rather too high — it would be easy enough to remove it and trim it shallower. The front coupler is a dummy, quite useless, of course, if the model is to be used for shunting. Therefore it must be replaced with a hornhook or a Kadee magnetic. The plastic is workable enough, however, so it would be no problem to cut a section out of the pilot beam to take a coupler draught box. Cylinder detail is superior to Rivarossi's and brake gear is fitted to the chassis sides. The model runs smoothly and will haul around six cars with ease, just about like its small full-size original. At under 4½ins long, this is an ideal model for a very small industrial layout, it looks good, and would be a good first purchase if you want to try American outline — subject to

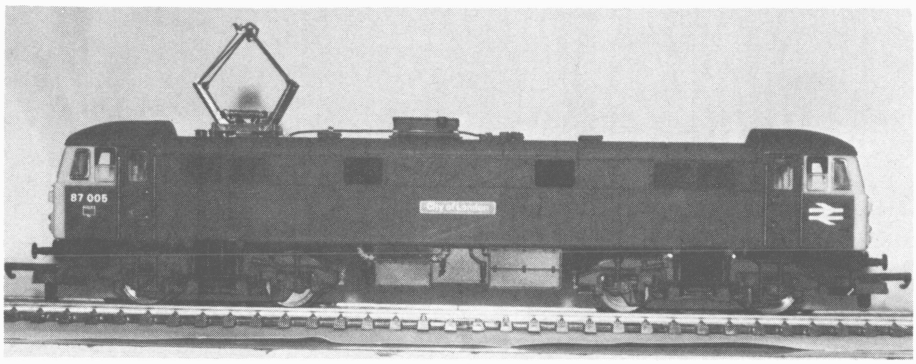


the alterations and detail changes mentioned above.

The UK distributors for Pemco are Eastern Models, 29 The Knoll, Hayes, Bromley, Kent. They'll send you an all-colour Pemco catalogue for 30p plus a stamp. Price is approximate due to uncertain exchange rates at the time of writing. Stockists of American outline models sell the Pemco range.

Lima: BR Class 87, 1:76 scale/00 gauge, UK £14.65

Hornby released a Class 86 earlier this year, and here we have not a duplication (as with 'Westerns', etc) but a different enough type from Lima, the 87, to make both worth having if you model the modern BR scene. Though the two classes are similar in size and style, the 87 has a different cab style and other minor variations, being a later (1973) design. The model checks out accurately in virtually all respects against official drawings except that the cab quarter lights and front windows appear fractionally too small by about the size of the window rims — though this may be an optical illusion — when compared to pictures. It would be possible to open these window apertures up a little if the model was taken apart first. However, the problem is not really worth too much worry as the model looks right from normal aspects. Between the belly fittings we think that strictly speaking there should be a little more 'air' but there is none on the model as a solid plastic moulding is used to simplify construction. Again this is not really a matter to worry about for the correct effect is achieved from normal viewpoints. Each cab is well detailed and door lights are 'dropped in characteristic fashion. Crew could be added easily from suitable figures.



The detail in the mouldings is worthy of the highest praise. Bogie sides and grilles, not to mention underfloor fittings are among the best we've seen. All handrails are moulded, then plated, and look most realistic, very like the unpainted bare metal of the original. As with the Hornby model the sit on the bogies is excellent and realistic, and the blackened wheels enhance the realism. A screw on the roof allows for change-over from track to pantograph pick-up. BR markings are neatly applied, but the finish gives the only real area for improvement. It is done in a very flat matt blue with unpainted yellow ends. These are not particularly well masked and the very matt blue is not even typical of weathered or frequently washed bodies — some grey primer would be showing through on paintwork this matt! Therefore if you want to turn the model into a real showpiece give it a repaint with the appropriate Humbrol colours. The nameplate as supplied is realistic, but it is a raised cast plate in real life, and suitable plates are (or will be) available no doubt from the firms who specialise in this business. Good nose detail is provided, but again it will be improved if picked out during the repainting. The reservation on the paint finish apart, this is a first-class model not to be missed if you model the current era. The performance was good on our brief running tests, well up to Lima's very acceptable standard with diesel models.

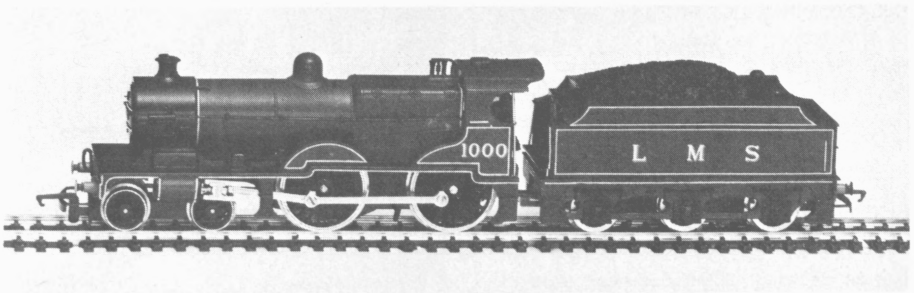
Hornby: Midland Compound, 1:76 scale/00 gauge, UK £26.95

Second of the new Hornby 4-4-0s to reach us is a good looker, like the previous 'Schools', but on a number of points it does not reach the same standard of perfection. The workmanship is good and the finish is excellent, but some compromise has obviously been necessary to make economical use of existing components and overcome some physical problems in scaling down the real thing.

Taking the locomotive first we have the celebrated No 1000, first of the class, modelled as rebuilt by Fowler in 1914 from Johnson's 1902 original. The real No 1000, in MR finish, is preserved at the NRM, BR having kept hold of it with great foresight back in 1949 instead of scrapping it. Hornby's body detail is good, matching pictures of the real thing very precisely as regards external 'plumbing' and fittings — there are many detail variations on Compounds depending on when they were built and if you change identities on the Hornby model you will probably have to change some of the piping detail, etc. Spectacle glazing is neatly done, sandwiched between two halves of the cab front. 'Brass' piping is well depicted on the backhead.

Below footplate level things get much less precise. The wheelbase and bogie spacing is correct, but the drivers are a scale 6½ft over treads instead of the 7ft of the prototype. This is not too bad by previous standards, though, for the wheels are well concealed by the splashers and this compromise will help those wishing to convert the model to a later engine with 6¾ft wheels. The problem of cylinder obstruction has been overcome by setting the cylinders about 3mm outboard on each side, then putting a right angle crank into the connecting rods so that they line up. This is cleverly and unobtrusively done, though the wide setting is apparent from front views. Chassis detail really needs attention. Missing are the sandboxes and pipes, and the third and second pair of brake blocks, plus the brake rigging. The one pair of brake blocks depicted is moulded in the wrong pattern (same as the 'Schools', in fact) and the actuating cylinders for the brakes are also omitted. Finally the standard chassis leaf sprigs are provided for the leading drivers when the real thing had vertical helical springs. Less obvious — and easily added — are the missing guard plates behind the slide bars. This list of omissions may sound formidable, but all could be added by the average modeller of some experience following the fashion shown in our 'Schools' article, October 1981 issue. You'd need a scale drawing in this case as the chassis detail is less straightforward than that of the 'Schools'.

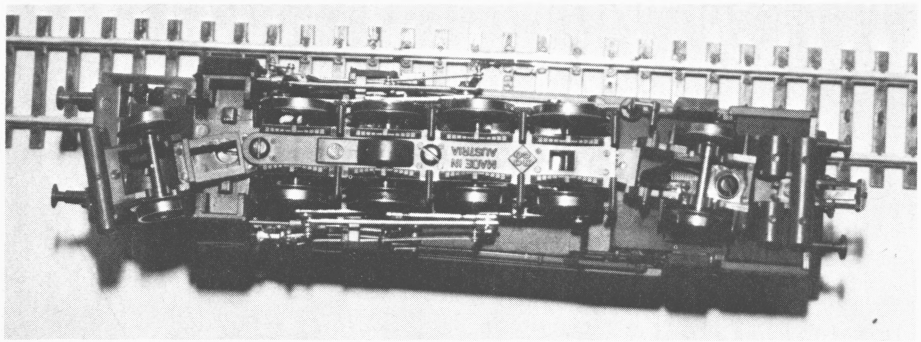
The tender is, in the circumstances, better than we expected at first glance. A fair attempt has been made to fit the long wheelbase Deeley tender around the standard Hornby motorised tender chassis. This type of long tender was fitted to No 1000, but by no means to all Compounds. The character is well captured but the body is around 4mm too long over scale length and 2mm too wide over body and chassis width. The upper valancing has been stretched to match, but the wheelbase and chassis detail, including brakes, is correct. On the real No 1000 the water vents are in the coal space (where they would be hidden under the high piled coal on this model!) but Hornby have put them on the tank top. There is a raised section here to clear the motor, though on the real thing we believe there is a dome for the water scoop apparatus at this point — an inspection of the real tender would clear up this matter (something we've never got around to doing). It would be difficult to shorten the Hornby

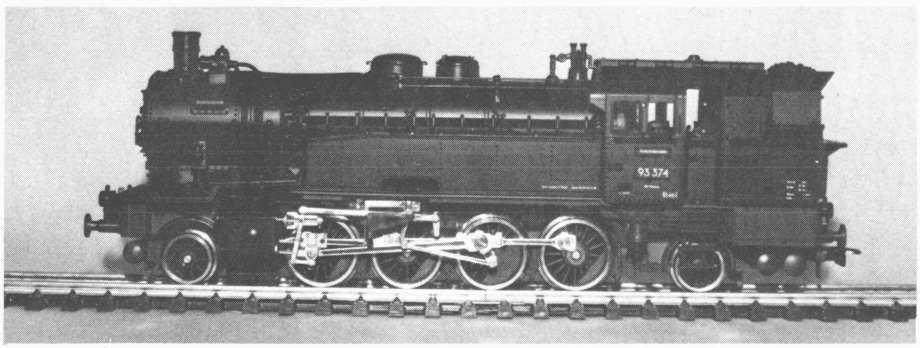


tender to correct scale length due to the die-cast chassis, though it might be possible for the adventurous.

One answer to the problem of these various inaccuracies would be to add the missing detail to the loco chassis, then use an Airfix Fowler 4F tender to produce a later Compound fitted with this type of tender, changing identity and body detail to suit. The model can certainly be enhanced with a little work, but as stated previously it is not as precise a replica as the 'Schools' in its 'straight from the box' form.

Performance is good — very smooth, quiet, and sure-footed, with pick-up from the front bogie as well as the driver. The sprung drawbar also works well. Summing up this model is much more of a 'curate's egg' than the 'Schools', needing much more work on it if you desire the perfect model. But please don't overlook it on account of anything we've said here, for it is still a fine model of value to the LMS enthusiast — or those who seek a pre-group model.





Roco: DB Class 93, 1:87 scale/H0 gauge, UK £31.50

Recent models from Roco have reached an astonishing standard of fine detailing and this latest release keeps the momentum going for it packs in so much piping and small separate parts that it comes as a surprise to find a bag of yet more optional parts included with the box. The Class 93 was originally Prussian Class T14, introduced in 1914 specifically to work Berlin commuter trains as a 2-8-2T. When the surburban routes to Berlin were electrified the type was used mostly for local passenger and freight trains. With an overall length of about 6¼ins and quite a flexible wheelbase, the model will be very much at home on small German-based layouts and it is suitable right up to 1960 for DB or about 1969 for DR (East Germany) settings. The model itself is marked for the pre-war DR, as a Hamburg-based machine carrying a last overhaul date of 23.6.39. Options provided in the bag of parts are for a covered coal bunker top (which can be exchanged for the one provided), all the buffer beam piping, cab side wind deflectors, dummy scale couplings, Roco close couplings, and Fleischmann-style couplings, so the modeller's every need is provided for. Piston rod tail covers are also provided. If you add these the model will require larger radius curves. Without them it will run on 15in radius curves. The motor is neatly housed below cab door level, so the top halves of crew figures could be added as desired. There were many further detail variations for conversion fans, including an original low bunker and different positions for some of the piping and pumps. To get the model round tight curves (it has quite a long fixed wheelbase), Roco have articulated the whole chassis so that it swings relative to the body, while the under-floor air tanks are attached to the bogies rather than the body. None of these cunning artifices are apparent from normal viewpoints. No doubt Roco will produce a post-war DB version — but if you fancy altering it yourself the main change will be an upper light at each end to match post-war DB practice.

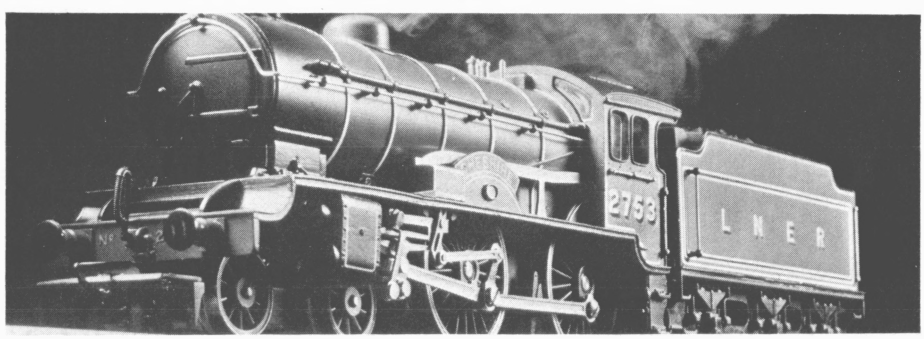
Performance matches looks with a fantastic slow speed crawl, so slow that you need a marker to convince yourself it is actually moving! We also found it would go round curves down to about 12in radius, and with coaxing would just about take a Roco 10in curve. This is a splendid model likely to give good service, and the price seems positively modest against the performance and degree of detail.

Hornby: D49/1 'Shire' Class, 1:76 scale/00 gauge, UK £26.95

LNER enthusiasts should be pleased with the 'Shire', third in the Hornby 4-4-0 series. It checks out very well against published drawings, the cab is fully glazed (with rear windows open) and the small detail is all in the right place. The cab interior detail is very complete, one of the best yet in this area, even though it is not very visible externally. The cab side hand rails are plastic, but so well moulded we thought they were wire at first, matching the boiler handrails. Missing body detail is limited to the lamp irons, the lifting holes in the front frames (easily drilled out), and the lightly constructed (and not very prominent) front footplate steps with their associated hand grips. The cast bracket holding the radius link is depicted only as a vestige, though its absence is hardly to be noticed. Finally the cylinders appear to be slightly too shallow in the usual way to allow bogie swing. Again this is hardly worth worrying about but the shallowness in this case is emphasised by the lining panel on the cylinders — putting a dirty wash over the lining to tone it down would probably be a visual improvement in this area. The leading brake blocks and sandpipes are missing — add them in a similar style as described for the 'Schools', October 1981 issue.

The group standard tender is provided, as fitted to most D49s. This is a good model in itself, though as a reader has pointed out the wheelbase is slightly in error, though not sufficient to notice without measuring — we missed this in our 'Footballer' review. Possibly one air tank should be removed (there were variations), and our 1948 *ABC* gives *Cheshire* (the Hornby model) as having a GCR type tender. However the Hornby model has the pre-1946 number and livery, so we presume that Hornby must have checked the standard tender as being suitable for the period of finish.

The complete ensemble is a joy to behold, enhanced by the close coupling which the sprung drawbar makes possible. Performance is excellent, as with the other 4-4-0s, the added bogie pick-up helping to ensure virtually no stalling on our running tests throught pointwork. We could not test the hauling capacity, but it feels strong and is certainly adequate for the average layout. Summing up this is a very pleasing model, not to be missed by any LNER enthusiast.



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BACHMANN "Old Timers" Passenger Coach or Combine £2.50 each. Freightcars (Box, Flat, Gondala, Water Tank Car, Caboose) £2.05 each. 4.4.0. Locomotive £14.25

BOOKS

We must have one of the best selections of American and European railway publications in England. Here are a few choice titles:- "NYC Power" £12.00; "B & O Power" £12.00; "Locos, Limiteds & Locals" 1950 era photos. £10.80; "Mighty 800" U.P.4.8.4. £11.97; "Two Feet Between the Rails" Vol 1 & 2 £24.00 each; "V & T Locos" £7.00; "Rio Grande Mainline thru the Rockies" £15.00; "Otto Perry's Railroad Pilgrimage" Giant 260 page 9" x 15" Photobook £27.00; "Americas Colorfull Railroads" All colour only £8.95; "Steam in the Allgau" 290 page German pictorial £14.45; "Locomotives in the War" Vol. 1,2 & 3 190 page pictorials of German railways at war, £9.05 each; "Swiss Locomotives & Railcars" plan & photo book £7.50; "Swiss Coaches & Baggage Vans" companion volume £7.50; "German Pocketbooks" (Photos & technical information) Steam, Diesel, Electrics, Goods Wagons, Passenger Coaches, Railcars, Narrow Gauge Locos, £3.85 each; "Bahn un Bild" (Railways in Pictures) a series of Austrian published hardback photobooks 96 pages £4.50 each. Sample titles - "Italian Steam", "Salzkammergut Narrow gauge", "Vienese Steam", "Vienese Electrics", "Zillertalbahn", "Rhaltian Bahn" U.S. Book List 70p.

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Bookshelf

NEW BOOKS FOR MODELLERS.

Railway Modelling, *by Michael Andress. Patrick Stephens Ltd, Bar Hill, Cambridge, CB3 8EL. £3.95.*
A selection of articles have been put together in book form, in order to present to the reader, a variety of styles, ideas and opinions from experts in their own field. The aim has been to cover most of the major aspects of the hobby such as locomotives, operation, structure and scenery. The emphasis is on converting and detailing ready-to-run locos, rather than on scratch-building. The information is practical with plenty of photographs and diagrams to illustrate methods and points raised. A very useful book to have on the shelf if you are looking for a general guide to railway modelling.

The Illustrated History of British Railways, *edited by Geoffrey Freeman Allen and Patrick Whitehouse. Weidenfeld Publishers Ltd, 91 Clapham High St, London, SW4 7TA. £12.95.*
If you have just started modelling trains and want to find out more about the story of the railways so that you can get more enjoyment from your engines, then you may want to look out for this book. At £12.95 it is expensive but it lives up to its promise of being an illustrated history. Not only are there masses of photographs but the publishers have also reproduced engravings and original advertisements of the period. Beginning at the time of the first railways, it goes on to describe the growth and development of the different networks right through to the present day. It is certainly not the ultimate reference work but if you want a beautifully presented coffee table styled book and one that is easy to read, then you may want to look out for this.

GWR Iron Minks, *by J.H. Lewis, M. Lloyd, R. Metcalf, N. Miller. HMRS, 23 Whitestone Rd, Berkley Down, Frome, Somerset. £1.95.*
Produced by the Historical Model Railway Society, this is a deeply researched booklet on a subject that may not be too familiar to some of our readers. Iron Minks look very similar to a related type, the gunpowder van, except that they do not have ventilators and are lined with wood. They have long been popular modelling subjects. If you want to know how the design developed or are searching for practical information then this is an answer to your prayer. There are plenty of diagrams and tables giving accurate specifications and these, combined with the photographs allow no excuses for not buckling down and having a go at super detailing your own model. After all, it is not everybody that can claim they had a mink for Christmas.

Trams in Amsterdam, *by Ray Deacon. Sheaf Publishing, 35 Mooroaks Road, Sheffield, S10 1BX. £5.95.*
Many railway and model railway enthusiasts are also interested in trams and with the virtual disappearance of the tram in Britain, attention often turns to the Continent where tramways still flourish. The general reader often has difficulty in obtaining much information on these European systems as he or she may not have access to the more specialised publications and probably cannot translate from the foreign literature. Thus it is especially pleasing to find a comprehensive book on the tramways of Amsterdam, a system of great interest and one which is easily accessible to the British holiday maker. The author is a tramway enthusiast of long standing who had the good fortune to work in Holland for 2½ years in the mid 1970s giving him the opportunity to study Amsterdam's trams in detail. The book covers the history of the system from its beginnings and describes in detail the network and how it developed.

Shopwindow

NEW KITS AND MODELS.

New items of interest to railway modellers are reviewed by the editorial staff or contributors and opinions expressed are theirs, not necessarily the views of the publishers. While every effort is made to give latest catalogue or recommended retail prices, prices quoted should be taken as a guide only due to variations in discounts, exchange rates, taxes, and postal rates. Most items are generally on sale in usual outlets, but addresses of suppliers are given where there is only limited availability.

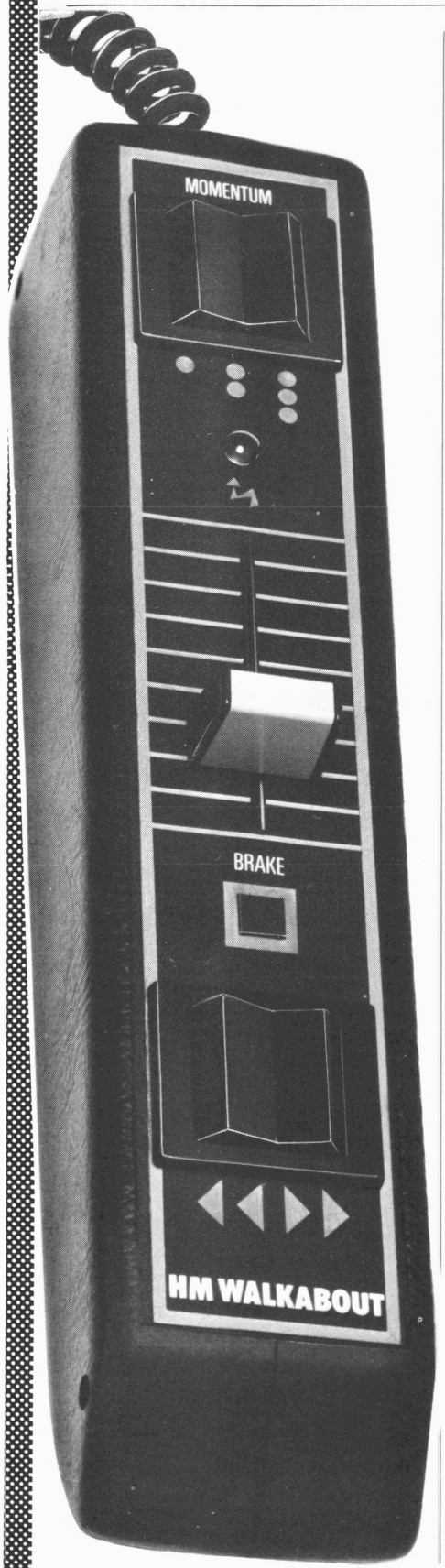
Hornby: 'Lord of the Isles'. 1:76 scale/00 gauge, UK £75
Collectors of the early Triang trains who missed out first time around (1961 and 1971), get their chance now to acquire the famous Dean Single *Lord of the Isles* which was one of the sensations of its day – both as a Triang model and in real life. In response to public demand Hornby looked out the old tools and the result is a delightful package containing the loco itself and three of the clerestory coaches which went with it – all done in Edwardian GWR style finish. Hornby say it was a difficult job getting everything together for the re-run as the tools were old and the production techniques have altered over the years. However, here is the set in a limited run of just 5,000, and just in time for the Christmas gift season, though the price is very much higher than it was 20 years ago. The set is beautifully boxed as befits something for collectors. The models are packed in foam and this insert is in a nicely printed box done in GWR style lining and lettering with the story of the Dean Single on the inner flap. It opens up like a book, and resembling a luxury volume it could, perhaps, even be kept on a bookshelf for display purposes. Checking the loco against drawings it is pleasing to see how accurate it is for the standards of the day, considering the difficulty of making a ready-to-run single wheeler. It is essentially as the original, but collectors need not worry that their 1961 originals will be devalued for this model has the Hornby trade mark and modern style wheels. The finish is also to modern Hornby standards, rather better than in the old days. Same can be said for the coaches, for though they retain the Triang trade mark they have modern bogies. It would be most useful if Hornby could keep on making these clerestory coaches beyond the 5,000 set run, for any GWR modeller would find them invaluable, just as in the old days when they were originally introduced.

Availability of this set means that anyone with pre-grouping ambitions is quite well served. With the Airfix Dean Goods due soon, plus the Hornby 'County' and early Pannier, you would have no trouble at all in putting together a GWR pre-1914 style layout straight from your local dealer's shelves.

Tenmille: Tallylyn coaches, 16mm scale, £8.50 each
In addition to the gauge 1 kits previously reviewed, Tenmille Products, Station Road, East Preston, Littlehampton, West Sussex, have produced kits for 16mm scale replicas of Tallylyn coaches to run on 0 gauge track. Construction follows the style of the gauge 1 kits previously described (see September 1981 issue), with wood parts and plastic overlays. All the parts are nicely prepared and scale drawings and a detailed assembly sheet come with each kit. We had two models, a Tallylyn all-3rd and the companion all-1st, plus a full brake. The kits exclude wheels and axle guards, though Tenmille are planning to introduce these as well. Assembly of these kits is very straightforward and they should be within the ability of anyone with moderate experience. A full price list of all Tenmille gauge 1 and 16mm scale kits can be had from the company in return for a SAE. Hadley Hobbies are London area stockists for the range.

THE FACTS OF LIFE. 2.

HM Walkabout – Control is the secret

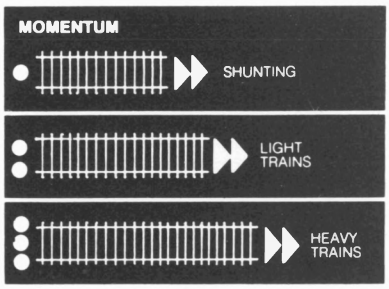


Model railway buffs are sensationalists. Ask any psychiatrist. They live on, thrive on, sensation. Which has them endlessly lusting after the latest loco, latest piece of rolling stock – things their layout can't possibly do without. Inevitably one new model follows another, since the craving can't be cured. It's just like a drug – and almost as costly.

Slowly but surely their layout looks less like a lifelike, busy railway system, and more like BR during a national shut-down. Sidings are choked with unbusy engines, idle wagons, redundant coaches. Something's not right, our railway buff feels, but maybe that smashing new version of the Mallard will do the trick... And so it will. For the moment. But should our hero take himself off to Dr. Fraud, the psychiatrist, he'd learn a thing or two. "You vont zenzation", intones the great man, "but only realism is zee answer. For you I prescribe zee HM Walkabout Unit. Zee vun control you *can* afford after paying my fees."

The doctor is right. With an electronic hand-held unit like this, the patient is in command, but free to wander round his layout at will. He can sense what it is like to ride the footplate, regulating speed, braking, performing all the operations of a full-scale railway system, though marvellously independent of the transformer. It is ideal to use in conjunction with the HM3000 Power Control Module, but will operate equally well with any transformer that has either a 16 volt A.C. or 12 volt D.C. uncontrolled outlet.

The HM Walkabout's specification makes its own impressive points. Let's take a brief look at these:-

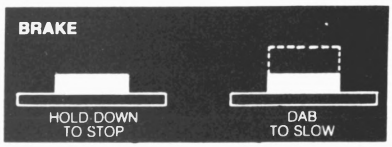


Momentum Control has three basic settings. The minimum level allows instant response and is ideal for shunting. The half setting gives a short delay in the build up of power to the track and is ideal for passenger trains, whilst the maximum setting gives a longer delay such as one would find with heavy goods trains.

Safety is ensured for the Walkabout by an electric trip. Should a short circuit occur, the overload LED illuminates until the fault is rectified.

Regulator Control is by slider and permits smoother control than is normally associated with rotary units. It is also much more convenient for a hand-held controller, since it can be operated single-handed.

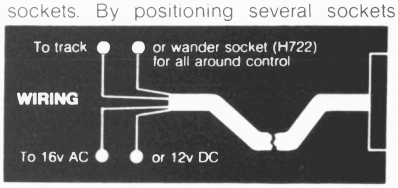
Brake Control by push button allows a train to be brought to a smooth gradual halt when utilising the two highest settings of momentum control.



Forward/Reverse Switch to change direction of the train but only by going through a centre OFF position. H&M always recommend a train is brought to a halt before changing direction, but should the operator overlook this point, the switch automatically compensates to reduce the risk of damaging your motor.

For the man who has everything, this inexpensive, flexible control is a 'must'. And in terms of making life simple, and amazing onlookers while showing off a layout's performance with utmost realism, it is something you won't want to be without.

There are many layouts which use conventional controllers, and to change fully to electronic control, with all its benefits, can be costly. The Walkabout allows the modeller to enter the field of electronic control with the minimum of expenditure. The unit is suitable for use with all controllers which have a 16v A.C. or 12v D.C. outlet of ½ amp or more. A large separate 16v A.C. or 12v D.C. transformer can be used to power several Walkabouts. For use with the Walkabout and available separately are wanderplugs and sockets. By positioning several sockets



around the track and connecting to the transformer it is possible by plugging in the Walkabout to control chosen circuits at close quarters. This is ideal for delicate shunting, etc. A really exciting prospect.

The Walkabout comes complete with a long cable, thus allowing the operator freedom to deal with any emergencies on his layout, such as de-railed wagons or sticking points, without letting go of the controls. Full details and technical specifications are to be found in the HM Model Equipment Handbook* available now from your local dealer.

Of course you'll go on seeking newer and newer models. But at this stage why not take Dr. Fraud's advice and consider how your operational skills can be improved with this most sophisticated of gadgets. See it now at your favourite H&M stockist, and give *realism* countless good runs for your money.

H&M Systems – keeping you one step ahead.

* *Available only from your local H&M dealer.*

H&M Systems – keeping you a step ahead

H&M (SYSTEMS) LTD. SANDOWN ROAD, WATFORD, HERTS. WD2 4AW. Watford 21253

Siba: Hauptsignal, for N or TT, UK £3.87
This is a very finely detailed model of the standard German type of Hauptsignal (roughly equivalent to a home signal), with lamp and post detail nicely done. It is ready wired for remote electric operation and will appeal to those with the larger style of fully automated layout. The base is on the hefty side, carrying the wiring, but it could be said to resemble concrete, or it could be covered in scatter material to resemble part of the embankment. It is self-contained for instant installation. A small lever gives optional hand operation. Workmanship is good in the fine old German way. It is strictly speaking for TT scale, but the (German only) instructions show how the post can be shortened for N scale use. The UK distributors are Eastern Models, 29 The Knoll, Hayes, Bromley, Kent. Postage is extra.

Roco: Telescope-roof wagon, 1:87 scale/H0 gauge, UK £3.60
Latest release from Roco is a superbly detailed and finished replica of the standard DB metal telescoping roof van of type Sahimms. The roof does not actually work, in this case, though it looks as though it does. Definition of the lettering is, as always, impeccable, it rolls well, and a small pack of handrails and other parts are supplied for affixing by the purchaser. One point – check the buffers and add a touch of cement to hold them. They are push-fit and could be lost if they ever work loose. This is a most impressive model.

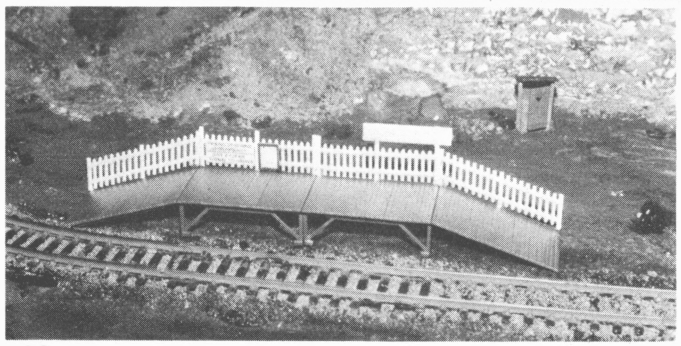
Branch Out: Scatter material, 60p per pack
A very superior texture, and a good range of colours, is offered by this range of scatter material. It is a far cry from dyed sawdust and the coarser materials commonly used. The makers also suggest a way of applying the material using diluted PVA glue, rather like bonded ballast and give the necessary instructions. Several shades of greens, browns, and greys are available. We had shade A9 which seems good for what might be called 'rough meadow grass' for 00/H0 or N, or 'moss' for larger scales (due to the fine texture). A bag contains about 200g of material (our estimate), and the suppliers are Loco Finish, 245 Highbridge Road, Sutton Coldfield, West Midlands B73 5QU. Postage extra.

P & D Marsh: GWR Auto-coach/43XX Mogul, 1:148 scale/N gauge, UK £4.75/£8.95
P & D Marsh is a new name to us. They are at BBP House, 117 John Bright Street, Birmingham B1 1BE. First kit received is for the 1933 period GWR auto-coach, and to complete it you need two Grafar bogies. The kit is extremely well presented and equally well thought out. The instruction sheet is modestly produced but very thorough in content. The coach sides are fully pre-printed in GWR finish on clear plastic so that the correct flush window effect is achieved. Rest of the kit comprises roof, chassis, and under-floor detail as cast parts for glue assembly. No interior detail is given. The castings are very clean and true, and on a dry run they appeared to mate very neatly and accurately. Second kit is very nice indeed – the complete body, with tender, for a 43XX Mogul, which gives the optional cab and steam pipes and other details for the alternative 93XX Mogul. Required to complete is a Grafar Prairie chassis. Though we didn't have time to complete the body before press time, a dry run shows that all parts fit well and the castings are extremely clean and sharp. There is virtually no flash though the footplate requires careful handling for it is thin and bends easily. This should be overcome, however, as soon as it is assembled with the boiler. Both these kits are of good quality. Postage is extra.

P & D Marsh: Accessory sets, 1:148 scale, UK 52p each
Marsh are also producing some useful sets of castings to add to the N scale scene. First is 'street furniture' comprising two post boxes, three bus stops, one guard rail, and a pair of crossing beacons. Next is 'platform trucks', with two porters' trolleys and a selection of packing cases, crates, and luggage. Finally we have 'sack loads', with two different stacks of sacks, ten individual sacks, and a sack truck. All are sharply cast and free of flash. Postage is extra on orders from Marsh, address as in the previous review.

Both Fleischmann and Märklin have recently published their 1981-82 winter catalogues, which include their 1981 releases. Copies are available from stockists.

The British Overseas Railways Historical Society need your help. They have been given an SPS Class engine by the Pakistan Government, but do not have the money to ship it back to this country. One of the 4-4-0 types, it was built by the Vulcan Foundry, near Manchester and was later shipped out for use in British India. The Society need to raise £5000 in order to bring this lovely old Edwardian locomotive back to Britain. If you care about Britain's Overseas past and would like to contribute to the fund, please send your donation, no matter how small to: The Pakistan Locomotive Fund, The North Western Museum of Science and Industry, 97 Grosvenor St, Manchester.



Wills: Halt and Victorian bridge, 1:76 scale, UK £1.30 each
Latest in the Wills line of plastic assembly kits, these two fine models both fill gaps in the way of accessories, and should prove most useful. The halt is a delight, being pre-coloured and just 7¼ inch long – about as small as you can get for 00 gauge. This is not the GWR style of halt, but the plainer version without a shelter seen elsewhere (though the GWR probably had some like this too). We certainly remember seeing halts like this in the far East (for a change) on former GER lines. Essentially this halt is just a wood platform with ramps and a back fence, assembling in four sections. It is immediately evident that two or more kits could be used to make a much longer halt, simply by adding the extra sections. By leaving off the back fence, and possibly one ramp, it could also be used very nicely for a freight loading platform, either alone or against a warehouse. As it comes it is just about one railbus long. If you are tempted to model light railways after reading our recent articles, this is just the kit you need. On the card packing is a printed notice telling passengers to signal the driver for the train to stop, a timetable notice, and a nameboard. When assembling we found that plastic card strips under the section joins were useful strengtheners, though once cemented it should stay rigid without such support.

The second kit is for a Victorian bridge of the cast balustrade variety, often seen but rarely modelled. Now Wills have done the hard work for you. It consists of two single span arches with linking cross-pieces. An asphalt printed roadway is included on the card packing if you want to use it as a road bridge. But it could also be used as a rail bridge or a canal bridge. Obviously two or more kits could probably be adapted to make a longer multi-arch bridge.

These kits should be available from all model railway stores.

Pemco: Box car/Tank car, 1:87 scale/H0 gauge, UK £1.95 each
Two more releases by Pemco, these both depict very recent US freight car designs suitable for the current and recent era – say the last decade. First we have a very finely moulded 50ft standard box car, probably an ACF standard design, with the modern style of wide door and with roof walk eliminated to meet current regulations. It carries modern style control markings and is beautifully moulded and finished in current CNR livery. We believe that other roads are also available. With RP25 wheels, and very smooth running characteristics, this is a good model. The second is a 60ft 'jumbo' tanker, one of the typical stark modern designs. Our sample is in Dow Chemicals finish, but Koppers, Gulf, and Deep Rock Oil are also catalogued. This vehicle has six-wheel trucks. While it will take tight radius curves quite happily it looks rather ridiculous doing so; hence this would be a better buy for the modeller with a larger layout. Finish and overall quality is good. Prices are approximate due to currency fluctuation.

Dundas Models: Welshpool & Llanfair Hunslet 2-6-2 tank loco kit, 009, UK £10.95
A very pleasing trend for the narrow gauge modeller working in

009 is the steady increase in the range, mainly as white metal kits, of models of British prototype locomotives and rolling stock available. The latest offering from Dundas Models is Welshpool & Llanfair No. 14, an attractive choice. This 2-6-2 Tank Locomotive was built in 1954 by Hunslet of Leeds for the Sierra Leone Railway (as SLR No 85, maker's No 3815). After closure of this line in 1974, No 85 was rescued by the Welshpool & Llanfair and shipped back to Britain. After a major overhaul and repainting the loco went into service as W & L No 14 in 1979. The kit represents this engine as running in 1980 and featured on the cover of the November 1980 issue of *Model Trains,* but parts are also provided for modelling as the original Sierra Leone version if preferred. The cast metal kit is designed to fit on to the Minitrix N205 chassis (to be purchased separately). The castings are well detailed with little flash and appear on a dry run to fit together neatly.

In addition to the numerous cast metal parts there are brass chassis retaining bolts, handrail knobs and wire, and etched brass works and number plates. The kit is complete even to the provision of a driver and fireman and coal for the bunker, requiring only adhesive and paint. The instruction sheet is clearly written and includes a helpful exploded diagram. Painting details for both the SLR and W & L liveries are also given. Modellers should find no difficulty in assembling this kit into an accurate and attractive model. Once we have had time to construct this kit we plan to feature a detailed article on its assembly in a future issue of *Model Trains.* The kit is available from model shops or by mail order from Dundas Models, 9 Dundas Street, Bo'ness, Scotland, EH15 0DF.

Cambrian: Railway wagon kits, 1:76 scale/OO gauge, prices in text

Previous reviews have often pointed out that many ready-to-run wagon models are on standardised chassis to keep down production costs. However, several specialist firms are now producing wagon kits where the entire model, including the chassis, is completely authentic. We have noted Ratio in the past, but another name to consider is Cambrian who produce some very useful kits. Their most recent venture is pre-coloured private owner wagons with the body parts all fully lettered and in accurate colours. This overcomes the main problem for modellers who can't letter and means that anyone can have good looking PO wagons made from kits. The initial release (at UK £1.86 each) was a range of black wagons, three for 5-plank versions and nine for 7-plank. Among them are Ocean, Somerset Collieries, and Carlton. Our sample was Derbyshire Stone. A second series covers other body colours and includes our sample Princess Royal, and nine others such as Steetley and Peterborough Co-op. All these models are based on the 1923 RCH wagon design and all check out with published drawings, the wheelbase being 9ft. The coloured wagon kits cost £2.37 each. In addition to these there are unpainted kits, moulded in black, for 1923 RCH 7, 8, 5, 4 and 3-plank designs, plus a 12 ton RCH beer van, all at £1.20 each. Then comes the RCH standard 14 ton tank wagon and the 8-plank convertible coke wagon at £2.47 and £1.33 respectively. A further series features a LMS (ex-GSWR) coal wagon, LMS and GWR steel wagons with differing door variants (two kits of each), a LMS conflat (white metal kit), and a BR standard Lowfit, with metal chassis. These kits are £1.20 except for those in white metal which are £2.19 each. Finally Cambrian offer the 1923 RCH wood and steel chassis as separate kits at 53p each, with LMS container kits at the same prices.

The plastic kits are neatly presented with very good instruction sheets. The colouring and printing is nicely done, though there seemed at first glance to be some rough edges and rather numerous mould marks on the chassis mouldings. However, with a little cleaning up the chassis parts look good, and the assembly is remarkably precise. Wheels are sometimes a let down on assembly kits, being thrown in often enough just for completeness. A little flash on the wheels in our kits made us think that replacements would be necessary but it turned out that these were remarkably good once cleaned up and the finished models ran very sweetly indeed. There is enough room between the axle guards to fit EM wheels if desired and the brake blocks in the the underframes then line up with the EM wheels. There is no weighting supplied but a little lead packed under the chassis members would probably help track holding on a layout. No couplers are provided with these kits, but a scale aperture is there

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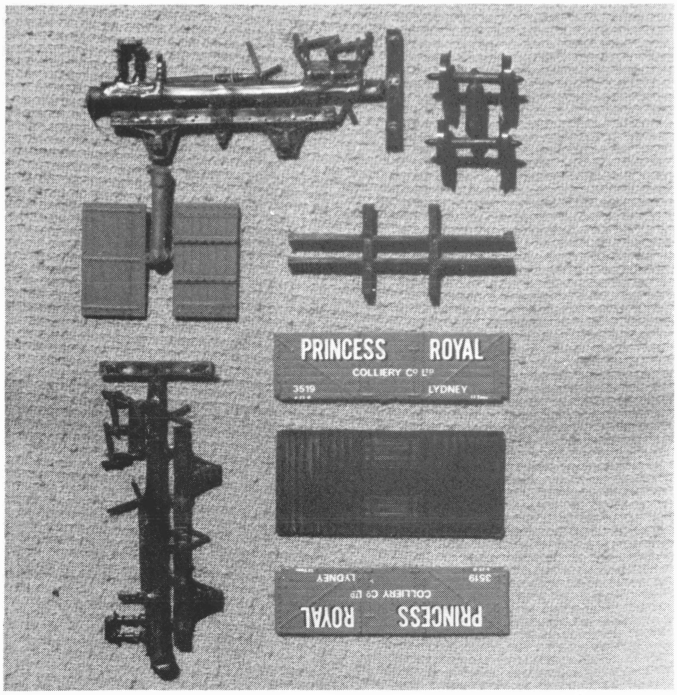
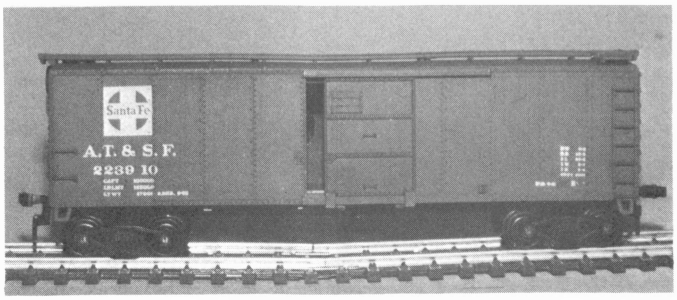


in the buffer beam to take a 3-link coupling. Cambrian have these at 20p a set or 24p a set for the 'Instanter' type. No provision is made for fitting automatics — these are very much scale models. Overall this is an excellent range and our completed samples were very pleasing. Anyone wanting to get away from ready-to-run wagons will find these very acceptable and reasonably priced. The models are distributed by Eames (Reading) Ltd, 24 Tudor Road, Reading RG1 1NH or Model Railway (Mfg) Co, 14 York Way, Kings Cross, London N1, post extra on mail order. A free price list covering the entire Cambrian range can be obtained from the distributors in return for a SAE.



Train-Miniature: X-29 Box Car, 1:87 scale/HO gauge, UK £2.27

The Train-Miniature series of kits has a higher standard of detail and finish than most and therefore the price is a little higher. From a very large range we had this standard PRR-built X-29 box car, a plain steel type which was used widely for many years. Our sample is in ATSF colours but other road names are available. Just glue and a small screw driver gets you going on this kit. Very slight clean up is needed on odd edges, but really everything more or less falls together if you follow the exploded assembly guide. The underframe is quite a model in its own right. The trucks have detail like brake shoes and brake rigging which is rarely seen on cheaper models (though you can't see them from a normal viewing position anyway). Sliding doors are neatly done but need careful fitting as the runners are very thin. The completed model is very pleasing and our only mild criticism is that the body tends to tilt a little too much to one side or other due to the very generous pivot on the chassis bolsters — rather like a baby Citroen going fast round a bend. This doesn't always happen but it spoils the look of the model when it does. The sample kit came from importers Victors, 166 Pentonville Road, London N1. Postage is extra if supplied to mail order. The X-29 was, as far as we know, not used outside PRR or associate companies. Other roads, like ATSF and B & O had similar standard designs however. To be sure about it specify the PRR version when ordering.

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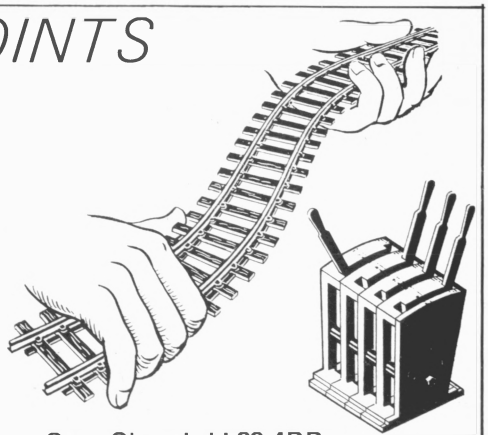

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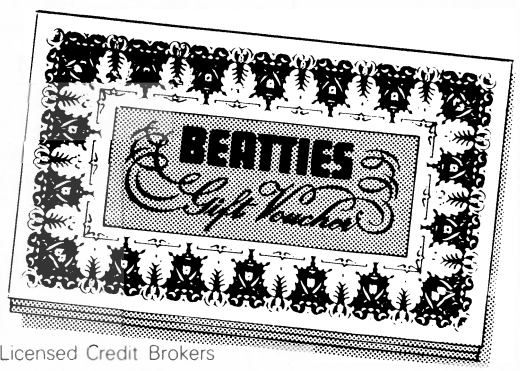

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